HITACHI

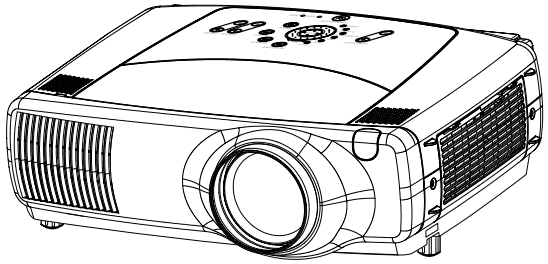
YK | No.0553E

CP-SX1350(P5SX+)

SERVICE MANUAL

⚠ Warning

The technical information and parts shown in this manual are not to be used for: the development, design, production, storage or use of nuclear, chemical, biological or missile weapons or other weapons of mass destruction; or military purposes; or purposes that endanger global safety and peace. Moreover, do not sell, give, or export these items, or grant permission for use to parties with such objectives. Forward all inquiries to Hitachi Ltd.



Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Hitachi Multimedia LCD Projector. Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. When replace the lamp, to avoid burns to your fingers. The lamp becomes too hot.
2. Never touch the lamp bulb with a finger or anything else. Never drop it or give it a shock. They may cause bursting of the bulb.
3. This projector is provided with a high voltage circuit for the lamp. Do not touch the electric parts of power unit (main), when turn on the projector.
4. Do not touch the exhaust fan, during operation.
5. The LCD module assembly is likely to be damaged. If replacing to the LCD LENS/PRISM assembly, do not hold the FPC of the LCD module assembly.
6. Use the cables which are included with the projector or specified.

Contents

1. Features ---------- 2
2. Specifications ---------- 2
3. Names of each part ---------- 3
4. Adjustment ---------- 5
5. Troubleshooting ---------- 12
6. Service points ---------- 18
7. Wiring diagram ---------- 31
8. Disassembly diagram ---------- 38
9. Replacement parts list ---------- 41
10. RS-232C commands ---------- 42
11. Block diagram ---------- 52
12. Connector connection diagram ---------- 53
13. Basic circuit diagram ---------- 54

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Multimedia LCD Projector

June 2005 Digital Media Division

1. Features

- Ultra high brightness
- Whisper mode equipped
- User memory function
- Partial magnification function
- Keystone distortion correction
- Optical lens shift

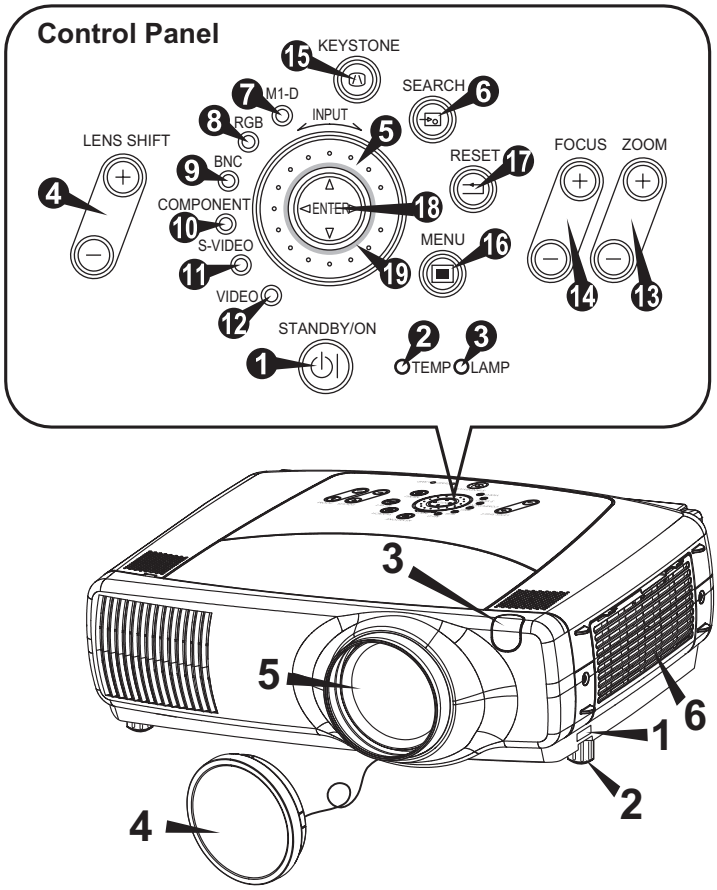
2. Specifications

Liquid Crystal Panel	Drive system		TFT active matrix
	Panel size		2.5cm (0.99inches)
	Number of pixels		1400 (H) × 1050 (V)
Lamp			310W
RGB signal input	RGB IN	D-sub 15pin	Video: Analog 0.7Vp-p, 75Ω terminator H/V. sync.: TTL level (positive/negative) Composite sync.: TTL level
		BNC	
	Digital input	MI-D	Type: T.M.D.S Amplitude differential signal: DC: 150~1200mV AC: 1.56Vp-p
	AUDIO IN	1	200mVrms, 57kΩ Stereo mini jack
		2	
Video signal input	COMPOSITE VIDEO	System	NTSC, NTSC4.43, PAL (BGDHI), SECAM, PAL-M, PAL-N, PAL60
			1.0Vp-p, 75Ω terminator RCA jack
	S-VIDEO	Y	1.0Vp-p, 75Ω terminator
		C	0.3Vp-p, 75Ω terminator
			Mini DIN 4-pin jack
	COMPONENT VIDEO	System	525i (480i), 525p (480p), 625i (576i), 720p, 1080i
		Y	1.0Vp-p, 75Ω terminator
		CB/CR	0.7Vp-p, 75Ω terminator
		PB/PR	0.7Vp-p, 75Ω terminator
			RCA jack ×3, BNC ×3
	AUDIO IN	L	200mVrms, 57kΩ (max. 3.0Vp-p) RCA jack ×2
		R	
Signal output	RGB OUT		Video: Analog 0.7Vp-p, 75Ω output impedance (positive) H/V. sync.: TTL level (positive/negative) Composite sync.: TTL level D-sub 15-pin shrink jack
	AUDIO OUT		0~200mVrms, output impedance 1kΩ Stereo mini jack
DC OUT			5V/1A (Power supply for the Wireless unit)
Speaker output			1.0W + 1.0W(stereo)
Power supply			AC100~120V / 5.2A , AC220~240V / 2.2A
Power consumption			470W
Dimensions			420(W) × 150(H) × 310(D) mm (No including protruding parts)
Weight			7.7kg (17lbs)
Temperature			Operation : 0~35°C Storage : -20~60°C
Accessories			Remote control transmitter × 1 Power cord × 3 RGB cable × 1 AV cable × 1 MI-D cable × 1 Battery × 2 User's manual 1 (with safety instructions) × 1 User's manual 2 (Book or CD-ROM) × 1

3. Names of each part

● Parts names

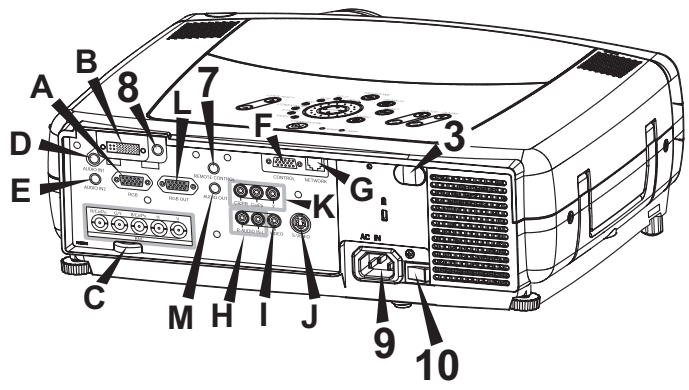
Projector



❶ STANDBY/ON button and STANDBY/ON indicator
❷ TEMP indicator
❸ LAMP indicator
❹ LENS SHIFT buttons
❺ INPUT dial
❻ SEARCH button
❼ M1-D indicator
❽ RGB indicator
❾ BNC indicator
❿ COMPONENT indicator
⓫ S-VIDEO indicator
⓬ VIDEO indicator
⓭ ZOOM buttons
⓮ FOCUS buttons
⓯ KEYSTONE button
⓰ MENU button
⓱ RESET button
⓲ ENTER button
⓳ Cursor buttons ▲/▼/◀/▶

Projector (Front/Right)

1 Elevator button
2 Elevator foot
3 Remote sensor
4 Lens cap
5 Lens
The picture is projected from here.
6 Filter cover
An air filter is inside.



Projector (Rear/Left)

A RGB port
B M1-D port
C BNC port
D AUDIO IN 1 port
E AUDIO IN 2 port
F CONTROL port
G NETWORK port
H AUDIO IN R/L port
I VIDEO IN port
J S-VIDEO port
K COMPONENT port
L RGB OUT port
M AUDIO OUT port
7 REMOTE CONTROL port
8 DC OUT port
9 AC Inlet
10 Power switch

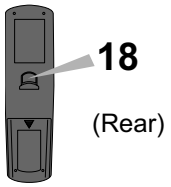
Remote control

1 STANDBY/ON button

4 LENS SHIFT buttons

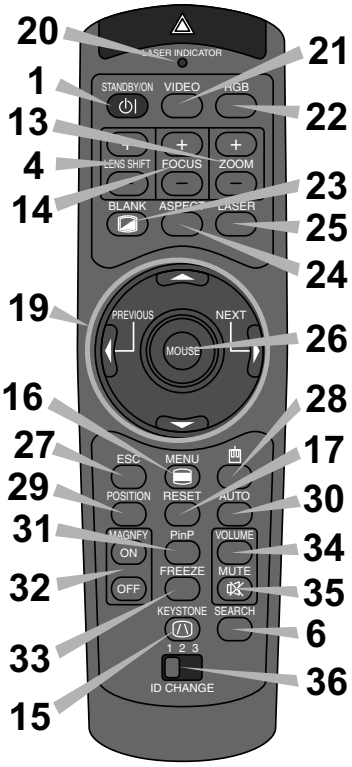
6 SEARCH button

13 ZOOM buttons
14 FOCUS buttons
15 KEYSTONE button
16 MENU button
17 RESET button
18 ENTER button
(🖱 Mouse left button)



(Rear)

19 Cursor buttons
▲/▼/◀/▶
(⌨ Keyboard
Arrow keys ↑/↓/←/→)



Remote Control

20 LASER INDICATOR
21 VIDEO button
22 RGB button
23 BLANK button
24 ASPECT button
25 LASER button
26 Cursor buttons ▲/▼/◀/▶
(🖱 Mouse move pointer)
27 ESC button
(⌨ Keyboard ESC key)
28 (🖱 Mouse right button)
29 POSITION button
30 AUTO button
31 PinP button
32 MAGNIFY buttons
33 FREEZE button
34 VOLUME button
35 MUTE button
36 ID CHANGE switch

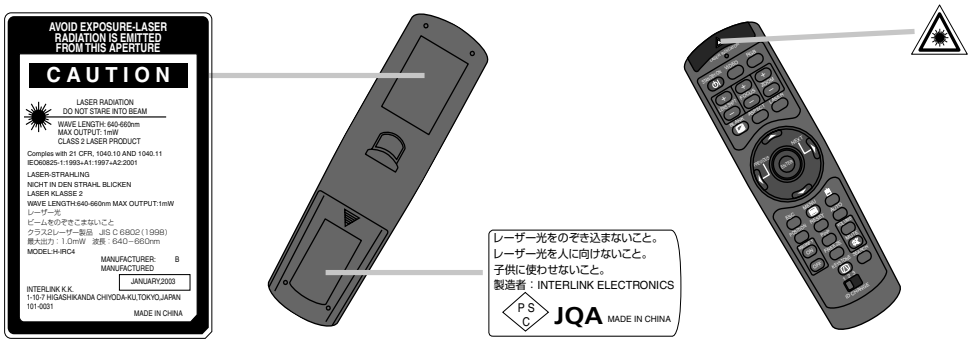
● About the Laser pointer

⚠ WARNING

• The laser pointer of the remote control is used in place of a finger or rod. Never look directly into the laser beam outlet or point the laser beam at other people. The laser beam can cause vision problems.

⚠ CAUTION

• Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This remote control has a laser pointer in place of a finger or rod. The laser beam works and the LASER INDICATOR lights while the LASER button is pressed.

4. Adjustment

4-1 Before adjusting

4-1-1 Selection of adjustment

When any parts in the table 4-1 are changed, choose the proper adjusting items with the chart.

Table 4-1: Relation between the replaced part and adjustment

Replaced part	Adjustment						
	Ghost (Chap.4-2)	Flicker (Chap.4-3)	E-POS (Chap.4-4)	NRSH (Chap.4-5)	White balance (Chap.4-6)	Color uniformity (Chap.4-7)	AIR FILTER (Chap.4-8)
Dichroic optics unit	×	○	△	×	△	○	○
LCD/LENS prism assembly	○	○	○	○	○	○	△
PWB assembly Drive	○	○	○	○	○	○	○
Lamp unit assembly	△	△	△	×	△	△	×
PWB assembly Dust sensor	×	×	×	×	×	×	○

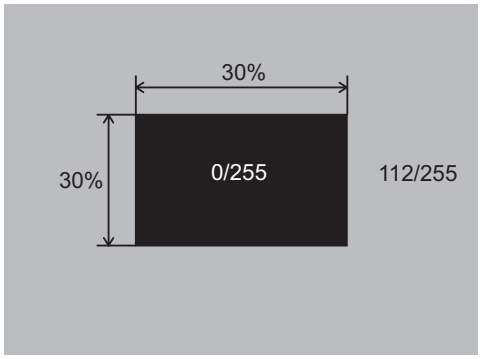
○ : means need for adjustment. × : means not need for djustment.
△ : means recommended.

4-1-2 Setting of condition before adjustment

1. Before starting adjustment, warm up the projector for about 10 minutes.(Blank white)
2. Set Zoom Wide to Max. And project an image with more than 1m (40 inches) in diagonal size.
3. Shift the Lens to the highest position with the [LENS SHIFT +] button.
4. Normalizing the video adjustment.
   (Press the [MENU] button of the Remote control transmitter to display the MAIN menu. After pressing the [▶] key, use the [▲] or [▼] key to select [RESET]. Reset menu will appear by the [▶] key, then choose [EXECUTE]. Next, open the PICTURE1 menu. Choose RESET and perfom EXECUTE by the same operation described above.
   *note :The MAIN and PICTURE1 menu is not reset with no signal.
5. Set the NORMAL at GAMMA in the PICTURE1 menu.
6. Perform all adjustments from the FACTORY MENU.
   Perform the following operations to display the FACTORY MENU.
   a. Press the [MENU] button on the Remote control transmitter (the MAIN menu will appear).
   b. Select the [RESET] in the MAIN menu, and then press the [▶] button.
   c. Next, press the [RESET] button one time. And hold the [RESET] button for 3 seconds or more (the FACTORY MENU will appear).

4-2 Ghost adjustment

Signals for internal adjustment

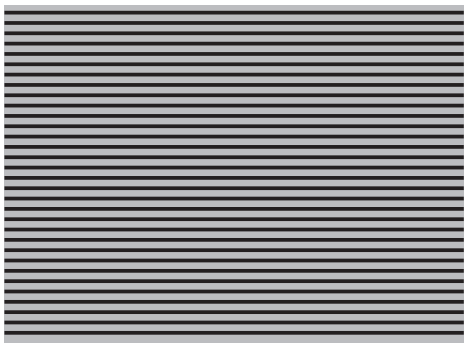


Adjustment procedure

1. Use DAC-P - GHOST - R: in the FACTORY MENU to adjust so that R color ghost is at a minimum.
   (Set the adjustment value to default, and then raise the value. When a ghost appears to the left of a vertical line, reduce the value by 2 steps as below.)
2. In the same way, use DAC-P - GHOST-G: in the FACTORY MENU to adjust so that G color ghost is at a minimum.
3. In the same way, use DAC-P - GHOST-B: in the FACTORY MENU to adjust so that B color ghost is at a minimum.

4-3 Flicker adjustment (V.COM adjustment)

Signals for internal adjustment

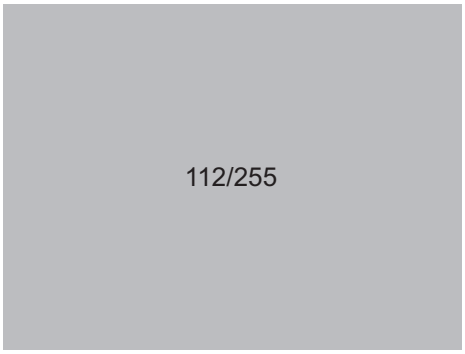


Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-2 Ghost adjustment.
2. Use DAC-P - V.COM - R: in the FACTORY MENU to adjust so that the flicker at the center of the screen is less than the flicker at the periphery.
   (When the flicker is about the same across the whole screen, adjust so that the flicker at the center of the screen is somewhat less than elsewhere.)
3. In the same way, use DAC-P - V.COM-G: in the FACTORY MENU to adjust the G color flicker.
4. In the same way, use DAC-P - V.COM-B: in the FACTORY MENU to adjust the B color flicker.

4-4 E-POS adjustment(vertical bars adjustment)

Signal pattern for internal adjustment

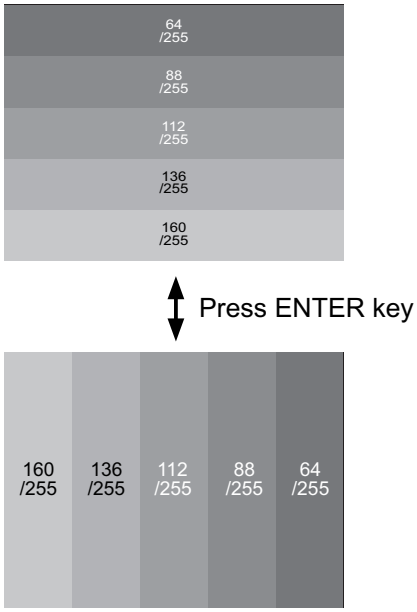


Adjustment procedure

1. Make this adjustment after completing the adjustment 4-3 Flicker adjustment.
2. Use DAC-P-E-POS-R : in the FACTORY MENU to adjust so that R color vertical bars is at a minimum.
3. In the same way, use DAC-P-E-POS-G : in the FACTORY MENU to adjust so that G color vertical bars is at a minimum.
4. In the same way, use DAC-P-E-POS-B : in the FACTORY MENU to adjust so that B color vertical bars is at a minimum.

4-5 NRSH adjustment (vertical stripe adjustment)

Signals for internal adjustment



Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-4 E-POS adjustment.
2. Use DAC-P - NRSH - R: in the FACTORY MENU to adjust so that the vertical lines spaced every 6 dots are as inconspicuous as possible. (Reduce the adjustment value when black stripes appear in the 2nd or 3rd tone from the black side. Note that when the adjustment value is lowered, white stripes may appear in the 2nd or 3rd tone from the bright side. Should this happen, adjust so that the stripes are as inconspicuous as possible.)
3. In the same way, use DAC-P - NRSH - G: in the FACTORY MENU to adjust vertical stripes of G color.
4. In the same way, use DAC-P - NRSH - B: in the FACTORY MENU to adjust vertical stripes of B color.
5. After completing this adjustment, return to Flicker adjustment in 4-3 and make sure NRSH adjustment has not affected Flicker performance. If it has become worse, readjust the Ficker and the NRSH adjustments.

4-6 White balance adjustment (visual inspection)

Preparations

1. Perform these adjustments after the NRSH adjustment described in Section 4-5.
2. Reset gamma correction before adjustment.
   - Place the cursor on [GAMMA] in the FACTORY MENU, press the [RESET] key and select [DEFAULT].

Adjustment procedure

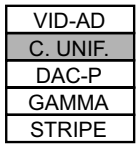
1. First, adjust the G color.
2. Select GAMMA, SB-CNT, and G: in the FACTORY MENU. If the background is white solid, press the [ENTER] key on the Remote control transmitter to change to [G] monochrome in the 33-tone grayscale.
3. Adjust GAMMA, SB-CNT, and G: in the FACTORY MENU so that brightness of 33 steps is best.
4. Don't adjust GAMMA, SB-BRT, and G: in the FACTORY MENU. Because we want to keep the best contrast ratio.
5. Then adjust colors R and B.
6. Select GAMMA, SB-CNT, and G: in the FACTORY MENU. If the background is white solid, press the [ENTER] key on the Remote control trasmitter to change to [W] monochrome in the 33-tone grayscale.
7. Adjust GAMMA, SB-BRT, R: and B: in the FACTORY MENU so that white balance in the low-brigtness tones is best.
8. Adjust GAMMA, SB-CNT, R: and B: in the FACTORY MENU so that white balance in the middle-brightness tones is best.
9. Repeat steps 7 to 8 above, and adjust so that white balance in the whole brightness tones is best.

4-7 Color uniformity adjustment

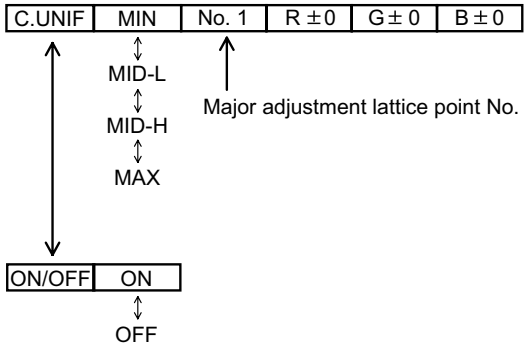
Preparations

1. Perform these adjustments after the white balance adjustment described in Section 4-6.
2. Make a color uniformity adjustment for the following four tones.
   - MIN tone (approx. 7% input signal)
   - MID-L tone (approx. 18% input signal)
   - MID-H tone (approx. 50% input signal)
   - MAX tone (approx. 75% input signal)
3. Place the cursor on [C.UNIF.] in the FACTORY MENU and press the [▶] key. This displays the Adjust Tone menu at the bottom of the screen. To choose the tone to be adjusted, press the [▶] key and then use the [▲] or [▼] key. Select the major adjustment lattice point No. and color, and then adjust them.
4. The major adjustment lattice point numbers (a total of 17 points) corresponds to the major adjustment lattice point positions in the diagram on the right. The color uniformity of the entire screen can be adjusted by adjusting the white balance for each of the points starting in order from the low numbers.
5. Adjustment point No.1 should not be adjusted, because it controls the brightness of the entire screen.
6. To temporarily turn correction off, place the cursor on [C.UNIF.] in the Adjust Tone menu and press the [▼] key. The ON/OFF menu appears. Place the cursor on [ON] with the [▶] key and press the [▼] key. To turn it on again, place the cursor on [OFF] and press the [▲] key.
7. Although this adjustment can also be made using internal signals, we will here use the [ENTER] key on the Remote control transmitter to select the following two signals.
   - Solid monochrome adjustment color (use G color adjustment when a color differential meter is used).
   - Solid white (use for adjustment other than above).
8. Reset color-shading correction before adjustment.
   - When 4 tones and all colors are to be reset, place the cursor on [C.UNIF.] in the FACTORY MENU, press the [RESET] key and select [DEFAULT].
   - When only 1 tone is to be reset, place the cursor on the tone to be reset, press the [RESET] key and select [DEFAULT].
   - Single tone and monochrome resets cannot be performed.

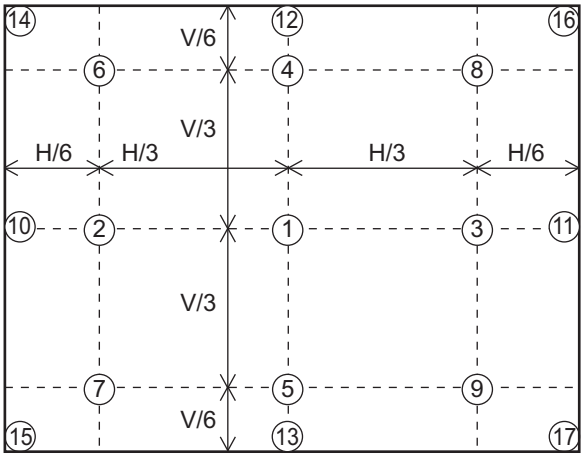
FACTORY MENU



Adjust tone menu



Major adjustment lattice point position



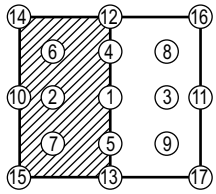
Adjustment procedure 1
(when a color differential meter is used)

1. First adjust [MID-L] tone [G:].
2. Select adjustment point [No.2][G:].
   When the background is not [G] monochrome, press the [ENTER] key on the Remote control transmitter to change to solid [G] monochrome.
3. Measure the illumination at adjustment points No. 2, No.3, No.10 and No.11.
   The values should be:
   No.2 = Y2 [lx] No.10 = Y10 [lx]
   No.3 = Y3 [lx] No.11 = Y11 [lx]
4. No.2 and No.3 adjustment point have the average of Y2 and Y3.
   Y2 = (Y2 + Y3) / 2 ± 3 [%]
   Y3 = (Y2 + Y3) / 2 ± 3 [%]
5. No.10 and No.11 adjustment point have the average of Y10 and Y11.
   Y10 = (Y10 + Y11) / 2 ± 3 [%]
   Y11 = (Y10 + Y11) / 2 ± 3 [%]
6. Then adjust [MID-L] tone [R] and [B].
   When the background is [G] monochrome, press the [ENTER] key on the Remote control transmitter to change to solid white.
7. Measure the color coordinates of adjustment point [No.1] and make a note of them.
   Assume that they are x = x1, y = y1.
   Note: When the CL-100 color and color difference meter is used, the [△](delta) mode is convenient. When adjustment point [No.1] color coordinate has been selected, set the slide switch on the side to [△](delta) while holding down the [F] button on the front panel. The measurement shown after this displays the deviation from measurement point 1.
8. Measure the color coordinates of measurement point [No.2] and adjust [No.2][R:] and [B:] so that the coordinates are as follows.
   x = x1 ± 0.005 , y = y1 ± 0.010
9. Similarly, measure adjustment points [No.3] to [No.17] and adjust their color coordinates starting in order from the small number points.
   This completes adjustments required for [MIN].
   Note: Since excessive correction may lead to a correction data overview during internal calculations, use the following values for reference.
   [No.2] to [No.5] ± 40 or less
   [No.6] to [No.9] ± 50 or less
   [No.10] to [No.13] ± 70 or less
   [No.14] to [No.17] ± 120 or less
10. Then adjust [MIN] tone [G] so that the adjustment data set two times as much as [MID-L] tone [G].
    This completes [G] color adjustments.
11. Then adjust [MIN] tone [R] and [B].
    Select [No.2] [B:] and press the [ENTER] key on the Remote control transmitter to change to solid white.
12. Measure the color coordinates of adjustment point [No.1] and make a note of them.
    Assume that they are x = x1, y = y1.
13. Now measure the color coordinates of measurement point [No.2] and adjust [No.2][R:] and [B:] so that the coordinates are as follows.
    x = x1 ± 0.005 , y = y1 ± 0.010 (Target)
    x = x1 ± 0.020 , y = y1 ± 0.040
14. Similarly, measure adjustment points [No.3] to [No.17] and adjust their color coordinates starting in order from the small number points.
    This completes [MIN] tone adjustments.
15. Now make similar adjustments for [MID-H] tone.
    (Adjust [MID-H] tone [G] so that the adjustment data set half as many as [MID-L] tone [G].)
16. Now make similar adjustments for [MAX] tone.
    (Adjust [MAX] tone [G] so that the adjustment data set half as many as [MID-L] tone [G].)

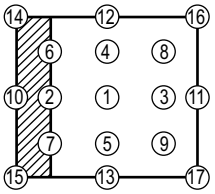
Adjustment procedure 2
(visual inspection)

1. First adjust [MIN] tone [G:].
2. Select [No.2] [G:].
   If the background is [G] monochrome, press the [ENTER] key on the Remote control transmitter to change to solid white.
3. View measurement point [No.2] and [No.3].
   Lower the [G] color intensity only of the color point whose [G] color is more intense than measurement point [No.1].
4. View measurement point [No.10] and [No.11].
   Lower the [G] color intensity only of the color point whose [G] color is more intense than measurement point [No.1], and raise the intensity of the point whose color intensity is lower than measurement point [No.1].
5. Now adjust the [MIN] tone for colors [R] and [B].
6. View measurement points [No.2], [No.3], [No.10] and [No.11]. Adjust the [R] and [B] of each measurement point so that they have the same color as measurement point [No.1].
   Adjustment technique:
   First, adjust [B:] of the point whose color is to be adjusted so that it approximates that of [No.1]. If [R:] is low at this time, the image will have cyan cast, in which case [R:] is increased. On the other hand, if [R:] is excessive, the image will have a magenta cast, in which case [R:] is decreased.
   Overall, a cyan cast makes it easy to see color shading.
7. Next, view measurement points [No.4], [No.5], [No.12], [No.13] and make similar adjustments.
8. Then adjust measurement points [No.6], [No.7], [No.8], [No.9], [No.14], [No.15], [No.16] and [No.17]. This completes the [MIN] tone adjustments.
9. Make similar another three tones as described in steps 1 to 8 above.

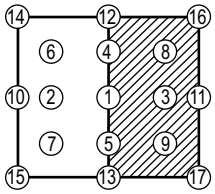
No. 2 deviation range



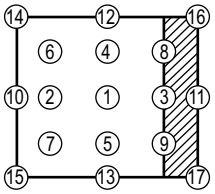
No. 10 deviation range



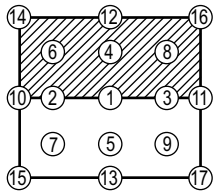
No. 3 deviation range



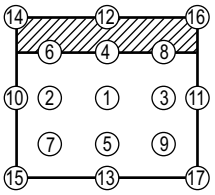
No. 11 deviation range



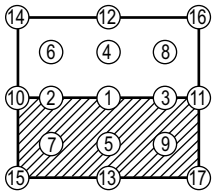
No. 4 deviation range



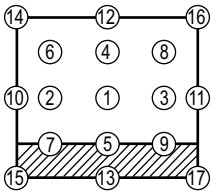
No. 12 deviation range



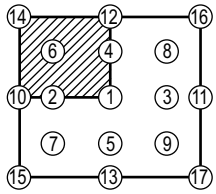
No. 5 deviation range



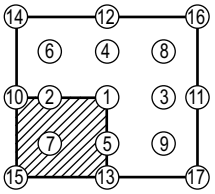
No. 13 deviation range



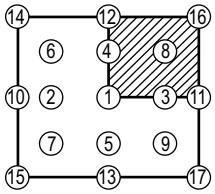
No. 6 deviation range



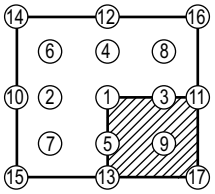
No. 7 deviation range



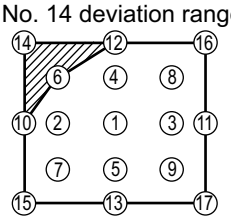
No. 8 deviation range



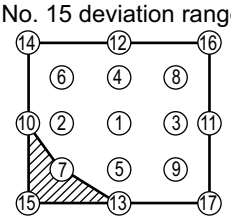
No. 9 deviation range



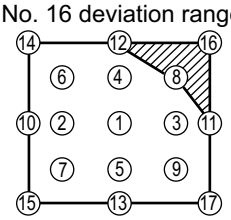
No. 14 deviation range



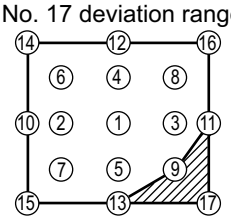
No. 15 deviation range



No. 16 deviation range



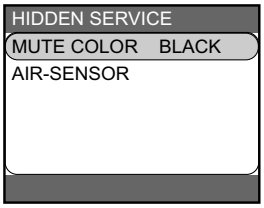
No. 17 deviation range



4-8 AIR-SENSOR adjustment

When the PWB assembly DRIVE or the PWB assembly DUST SENSOR is replaced, perform this adjustment after completing reassembling the projector.

1. Before this adjustment, clean the air filter and make sure the projector is compretely assembled.
2. Open HIDDEN SERVICE MENU and choose AIR-SENSOR by using ▼ button.
   HIDDEN SERVICE menu comes up by following operation.



When using control panel	When using remote control
1. Display the menu by the “MENU” button. 2. Select the “OPTION” on the menu. 3. Continue press the button “◀” first, then press the button “◀” together with “RESET”, and hold for 3 seconds.	1. Display the menu by the “MENU” button. 2. Select the “OPTION” on the menu. 3. Press the “MAGNIFY OFF” button. Next hold the “MAGNIFY OFF” button for 3 seconds.

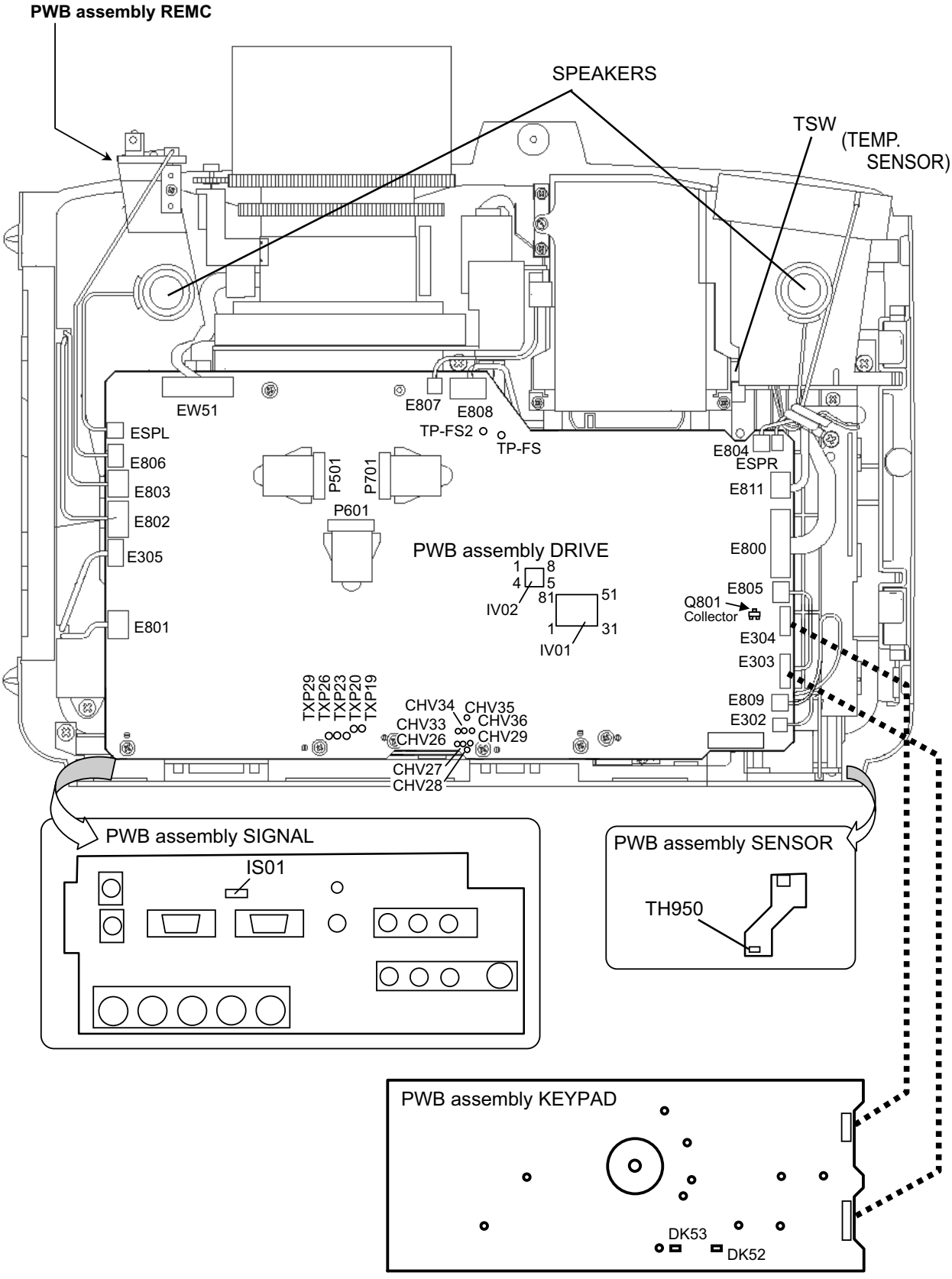
3. Press the ▶ button. Next press the [▲] button to select EXECUTE. The adjustment program runs automatically.
4. After the massage of "END" is displayed, check the Offset value displayed according to the following spec
   Spec. : 10 ≦ Offset: ≦ 65
5. If out of spec, confirm the below conditions Then retry the same adjustment.

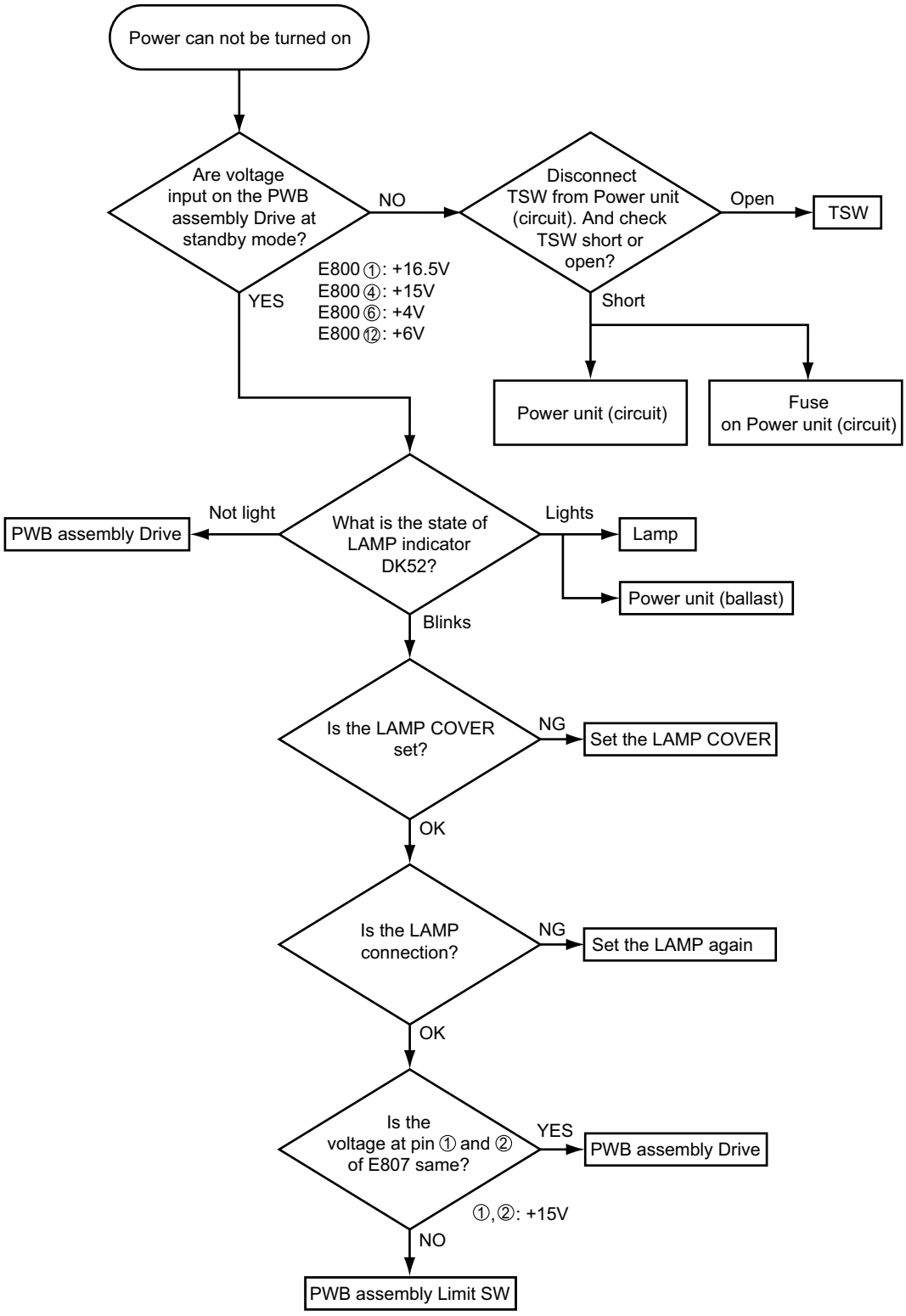
	Description
(a)	Installing the air filter correctly.
(b)	No obstruction and dust on air filter. (If not good condition, clean or replace the air filter.)
(c)	Using the proper type of air filter.
(d)	Installing the PWB assembly DUST SENSOR correctly.
(e)	Connecting the proper wires to E305 firmly.
(f)	Installing the FILTER COVER correctly.

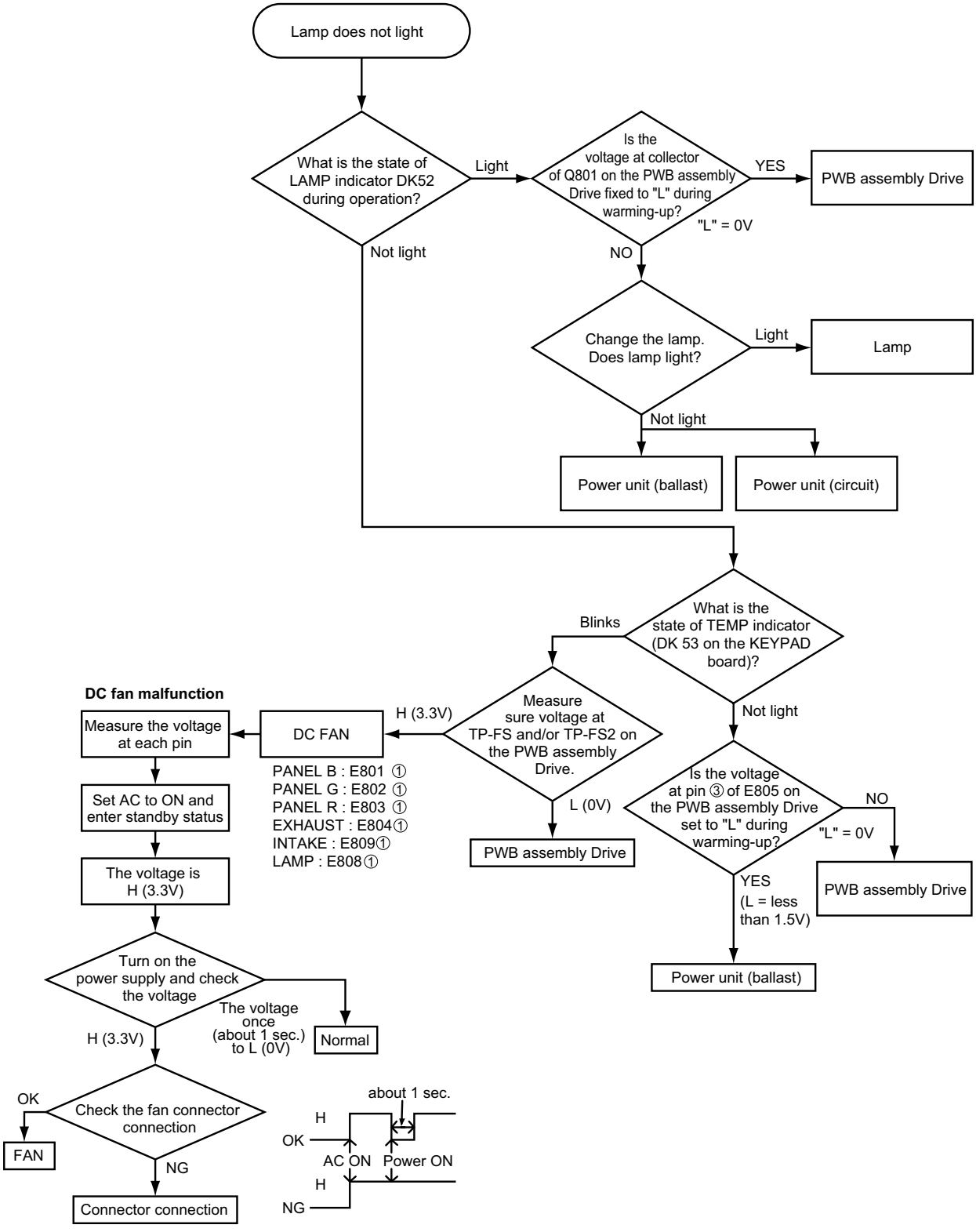
6. If the all conditions above is okay, replace the PWB assembly Drive or the PWB assembly Dust sensor.

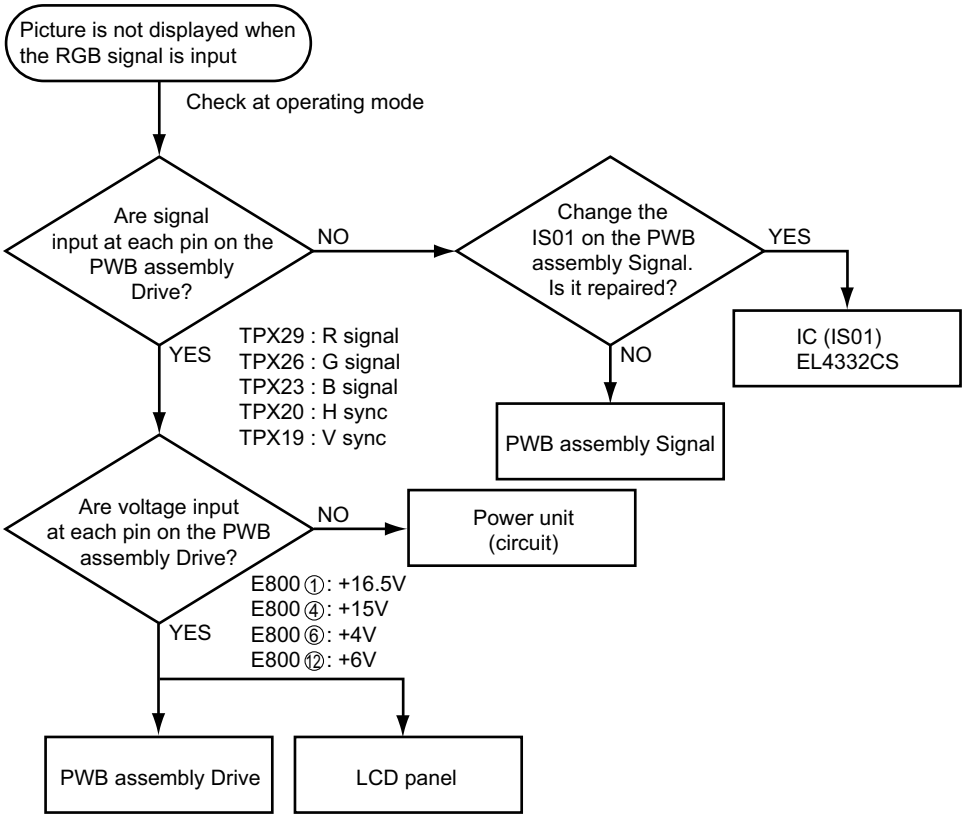
5. Troubleshooting

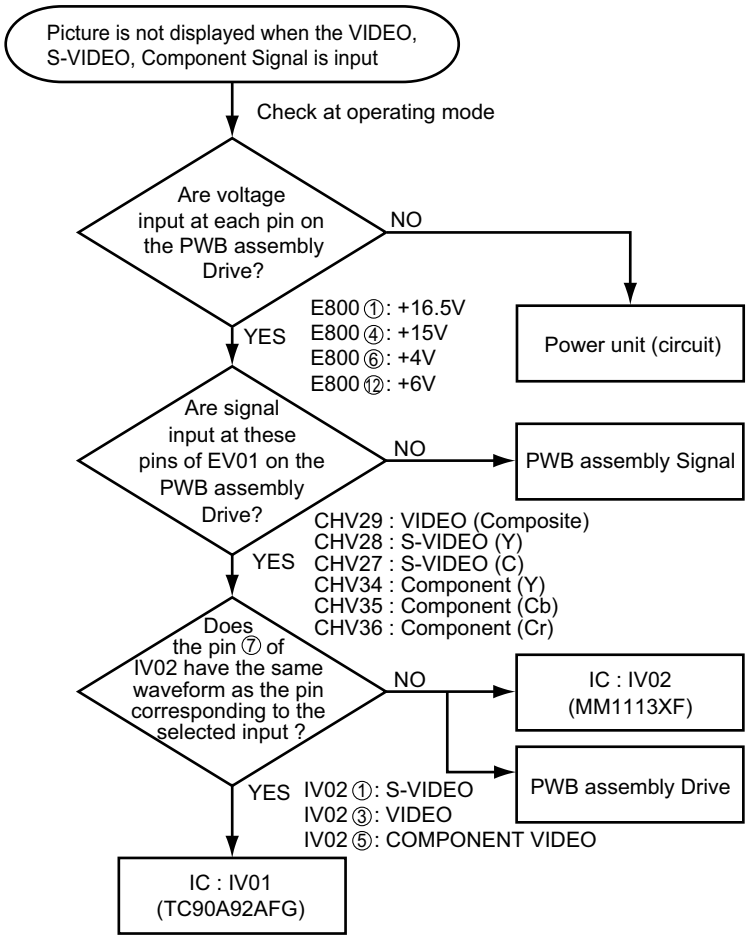
Check points

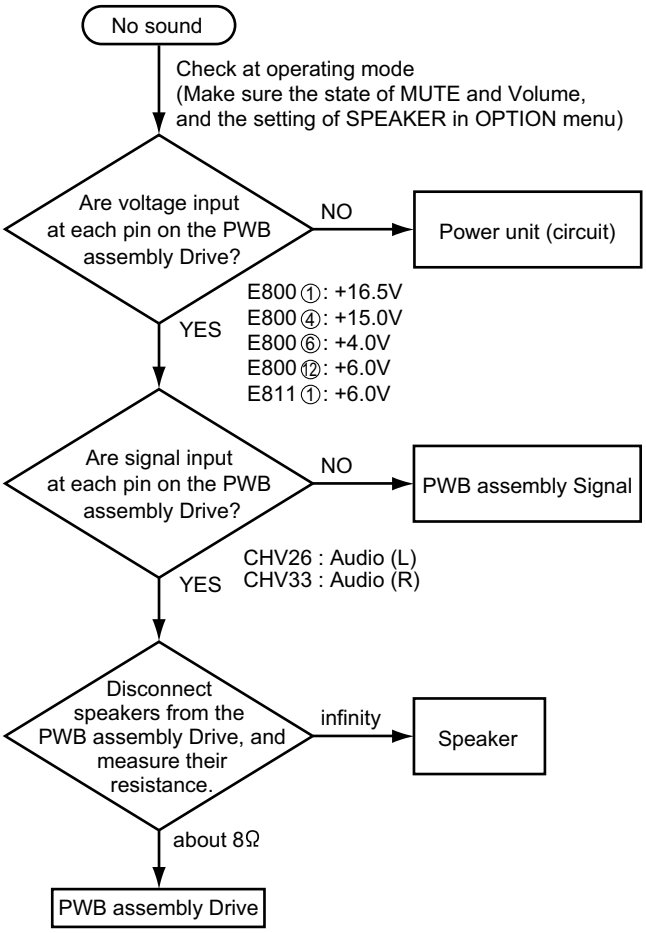


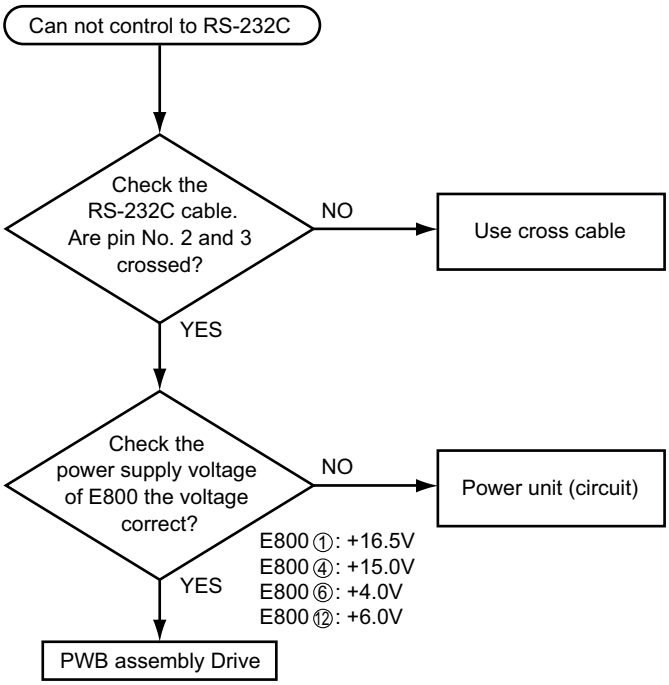

Power can not be turned on
Are voltage input on the PWB assembly Drive at standby mode?
NO
Disconnect TSW from Power unit (circuit). And check TSW short or open?
Open
TSW
Short
Power unit (circuit)
Fuse on Power unit (circuit)
YES
E800 ①: +16.5V
E800 ④: +15V
E800 ⑥: +4V
E800 ⑫: +6V
What is the state of LAMP indicator DK52?
Not light
PWB assembly Drive
Lights
Lamp
Power unit (ballast)
Blinks
Is the LAMP COVER set?
NG
Set the LAMP COVER
OK
Is the LAMP connection?
NG
Set the LAMP again
OK
Is the voltage at pin ① and ② of E807 same?
YES
PWB assembly Drive
①,②: +15V
NO
PWB assembly Limit SW


Lamp does not light
What is the state of LAMP indicator DK52 during operation?
Light
Is the voltage at collector of Q801 on the PWB assembly Drive fixed to "L" during warming-up?
YES
PWB assembly Drive
"L" = 0V
Not light
NO
Change the lamp. Does lamp light?
Light
Lamp
Not light
Power unit (ballast)
Power unit (circuit)
What is the state of TEMP indicator (DK 53 on the KEYPAD board)?
Blinks
Not light
Measure sure voltage at TP-FS and/or TP-FS2 on the PWB assembly Drive.
H (3.3V)
L (0V)
PWB assembly Drive
DC FAN
PANEL B : E801 ①
PANEL G : E802 ①
PANEL R : E803 ①
EXHAUST : E804①
INTAKE : E809①
LAMP : E808①
DC fan malfunction
Measure the voltage at each pin
Set AC to ON and enter standby status
The voltage is H (3.3V)
Turn on the power supply and check the voltage
The voltage once (about 1 sec.) to L (0V)
Normal
H (3.3V)
OK
Check the fan connector connection
FAN
NG
Connector connection
Is the voltage at pin ③ of E805 on the PWB assembly Drive set to "L" during warming-up?
NO
"L" = 0V
PWB assembly Drive
YES (L = less than 1.5V)
Power unit (ballast)
about 1 sec.
H
OK
AC ON
Power ON
H
NG


Picture is not displayed when the RGB signal is input
Check at operating mode
Are signal input at each pin on the PWB assembly Drive?
NO
Change the IS01 on the PWB assembly Signal. Is it repaired?
YES
IC (IS01) EL4332CS
NO
PWB assembly Signal
YES
TPX29 : R signal
TPX26 : G signal
TPX23 : B signal
TPX20 : H sync
TPX19 : V sync
Are voltage input at each pin on the PWB assembly Drive?
NO
Power unit (circuit)
E800 ①: +16.5V
E800 ④: +15V
E800 ⑥: +4V
E800 ⑫: +6V
YES
PWB assembly Drive
LCD panel

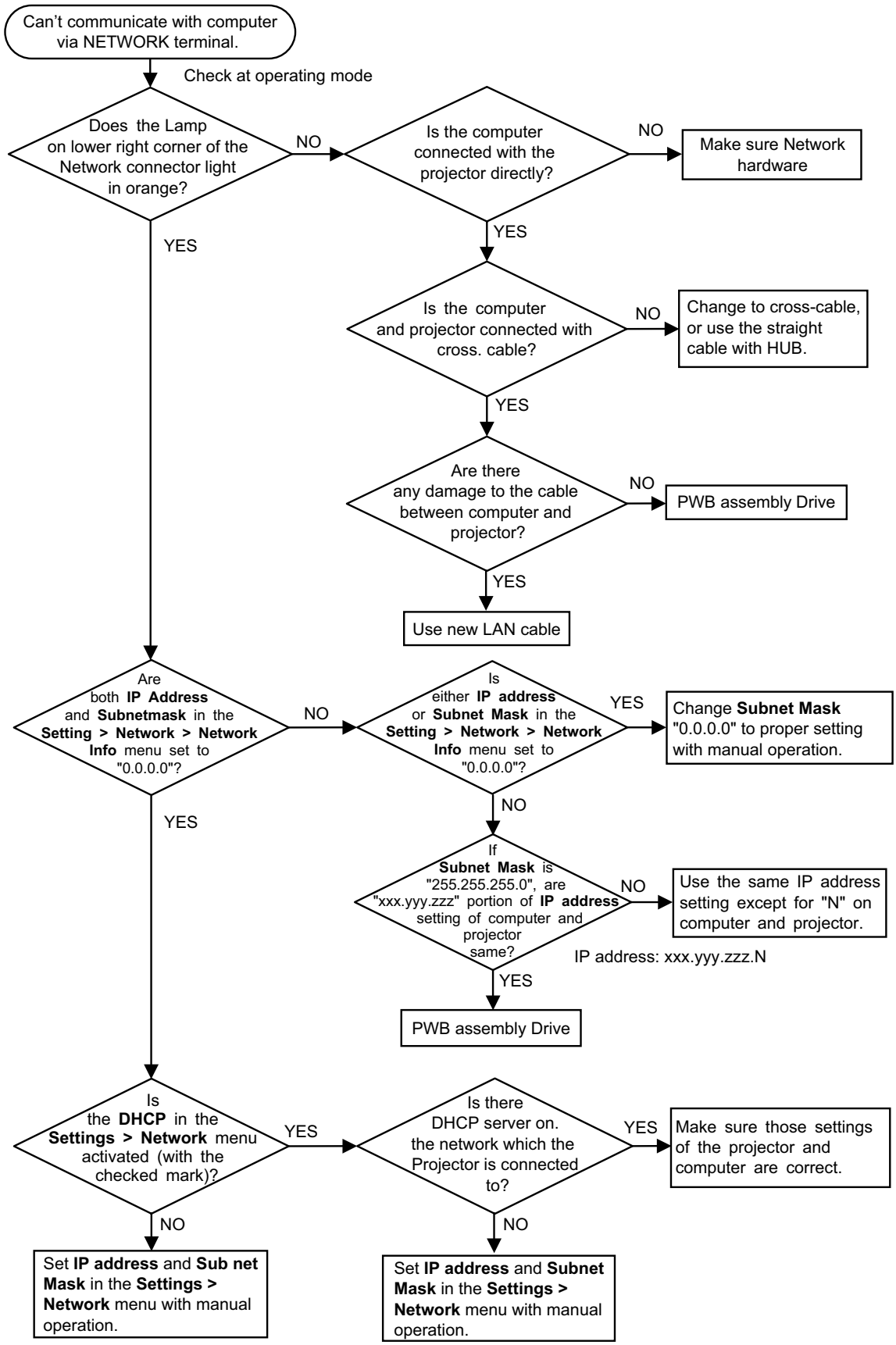

Picture is not displayed when the VIDEO, S-VIDEO, Component Signal is input
Check at operating mode
Are voltage input at each pin on the PWB assembly Drive?
NO
Power unit (circuit)
E800 ①: +16.5V
E800 ④: +15V
E800 ⑥: +4V
E800 ⑫: +6V
YES
Are signal input at these pins of EV01 on the PWB assembly Drive?
NO
PWB assembly Signal
CHV29 : VIDEO (Composite)
CHV28 : S-VIDEO (Y)
CHV27 : S-VIDEO (C)
CHV34 : Component (Y)
CHV35 : Component (Cb)
CHV36 : Component (Cr)
YES
Does the pin ⑦ of IV02 have the same waveform as the pin corresponding to the selected input ?
NO
IC : IV02 (MM1113XF)
PWB assembly Drive
YES
IV02 ①: S-VIDEO
IV02 ③: VIDEO
IV02 ⑤: COMPONENT VIDEO
IC : IV01 (TC90A92AFG)


No sound
Check at operating mode
(Make sure the state of MUTE and Volume,
and the setting of SPEAKER in OPTION menu)
Are voltage input at each pin on the PWB assembly Drive?
NO
Power unit (circuit)
YES
E800 ①: +16.5V
E800 ④: +15.0V
E800 ⑥: +4.0V
E800 ⑫: +6.0V
E811 ①: +6.0V
Are signal input at each pin on the PWB assembly Drive?
NO
PWB assembly Signal
YES
CHV26 : Audio (L)
CHV33 : Audio (R)
Disconnect speakers from the PWB assembly Drive, and measure their resistance.
infinity
Speaker
about 8Ω
PWB assembly Drive



The check after parts change

1. PC power supply OFF
2. Connection of cable
3. Projector starting
4. PC starting
   *When not operating :
   PC set up change of cable.


Can't communicate with computer via NETWORK terminal.
Check at operating mode
Does the Lamp on lower right corner of the Network connector light in orange?
NO
Is the computer connected with the projector directly?
NO
Make sure Network hardware
YES
YES
Is the computer and projector connected with cross. cable?
NO
Change to cross-cable, or use the straight cable with HUB.
YES
Are there any damage to the cable between computer and projector?
NO
PWB assembly Drive
YES
Use new LAN cable
Are both IP Address and Subnetmask in the Setting > Network > Network Info menu set to "0.0.0.0"?
NO
Is either IP address or Subnet Mask in the Setting > Network > Network Info menu set to "0.0.0.0"?
YES
Change Subnet Mask "0.0.0.0" to proper setting with manual operation.
YES
NO
If Subnet Mask is "255.255.255.0", are "xxx.yyy.zzz" portion of IP address setting of computer and projector same?
NO
Use the same IP address setting except for "N" on computer and projector.
IP address: xxx.yyy.zzz.N
YES
PWB assembly Drive
Is the DHCP in the Settings > Network menu activated (with the checked mark)?
YES
Is there DHCP server on. the network which the Projector is connected to?
YES
Make sure those settings of the projector and computer are correct.
NO
NO
Set IP address and Sub net Mask in the Settings > Network menu with manual operation.
Set IP address and Subnet Mask in the Settings > Network menu with manual operation.

6. Service points

6-1 Lead free solder [CAUTION]

This product uses lead free solder (unleaded) to help preserve the environment. Please read these instructions before attempting any soldering work.

⚠ CAUTION
Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead free solder can splatter at high temperatures (600˚C).

■ Lead free solder indicator

Printed circuit boards using lead free solder are engraved with an "F."

■ Properties of lead free solder

The melting point of lead free solder is 40-50˚C higher than leaded solder.

■ Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended.
Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

Precautions when using leaded solder

- Remove all lead free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead free solder has been completely melted (do not apply the soldering iron without solder).

■ Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.
The melting point of lead free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

Recommended soldering iron:

- Soldering iron with temperature control function (temperature range: 320-450˚C)

Recommended temperature range per part:

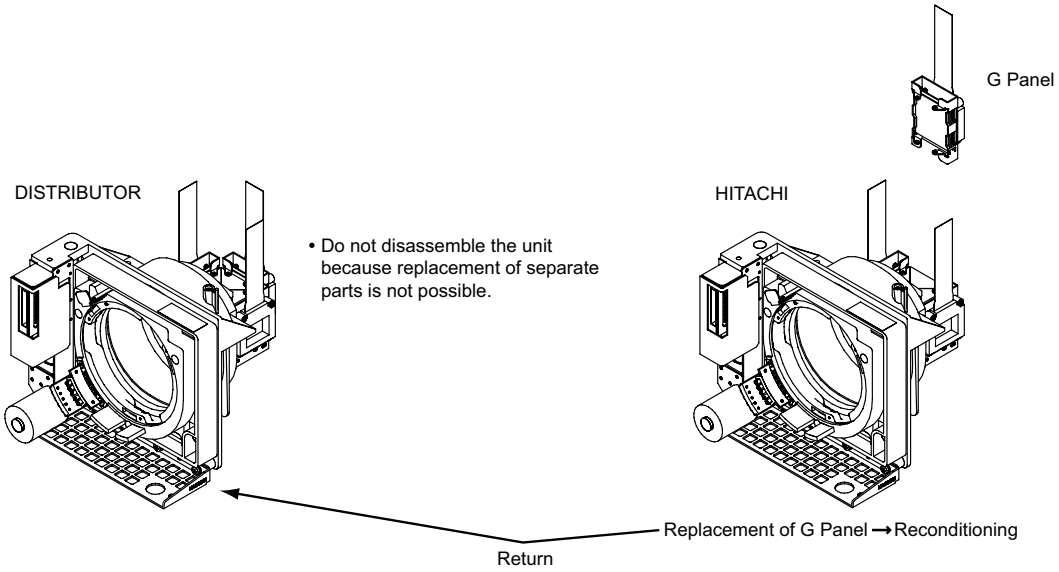
Part	Soldering iron temperature
Mounting (chips) on mounted PCB	320˚C±30˚C
Mounting (chips) on empty PCB	380˚C±30˚C
Chassis, metallic shield, etc.	420˚C±30˚C

The PWB assembly which has used lead free solder

① PWB assembly DRIVE
② PWB assembly SENSOR
③ PWB assembly REMC
④ PWB assembly LIMIT SW
⑤ PWB assembly SIGNAL
⑥ PWB assembly DUST SENSOR
⑦ PWB assembly KEYPAD
⑧ POWER UNIT (BALLAST)
⑨ POWER UNIT (CIRCUIT)

6-2 Before replacing the LCD/PRISM assembly

You should not replace separately the parts of the liquid crystal panel of LCD/Lens prism because it works properly only when used together. Therefore, regarding these parts, you can either replace part, LCD/PRISM assembly, or send the whole unit LCD/PRISM assembly back to HITACHI, where we will replace the malfunctioning part, recondition the device and send it back to you. Note that you can also replace the LCD/LENS PRISM assembly, which consists of LCD/PRISM assembly and LENS assembly.


G Panel
DISTRIBUTOR
HITACHI
• Do not disassemble the unit because replacement of separate parts is not possible.
Replacement of G Panel → Reconditioning
Return

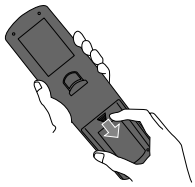
NOTE : When it is hard to screw the LCD/Lens Prism assembly on the bottom case, extend elevator feet to do easily.

6-3 Putting batteries

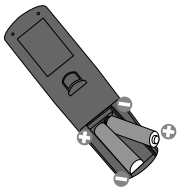
⚠ CAUTION

- About the battery
- Keep a battery away from children and pets.
- Use only the battery specified: two AA batteries.
- Do not mix new battery with used one.
- Make sure the plus and minus terminals are correctly aligned when loading the battery (as indicated in the remote control).
- Dispose of batteries in accord with environmental laws.

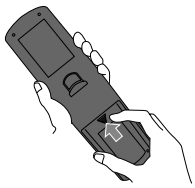
1. Remove the battery cover.
   Slide back and remove the battery cover in the direction of the arrow.



2. Insert the batteries.
   Align and insert the two AA batteries according to their plus minus terminals (as indicated in the remote control).



3. Close the battery cover.
   Replace the battery cover in the direction of the arrow and snap it back into place.



6-4 Air filter

⚠ WARNING

- Please carefully read the “User’s Manual - Safety Guide.
- Before caring, make sure the power switch is off and the power cable is not plugged in, then wait at least 45 minutes for the lamp to cool sufficiently.
- Use only the air filter of the specified type.
- Do not use the projector with the air filter and filter cover removed. The use without the air filter could result in damage.

⚠ CAUTION

- If the air filter becomes clogged by dust or the like, internal temperature rises and could cause malfunction. The power is automatically turned off in order to prevent the projector from overheating internally.

● Caring for the Air filter

The item "FILTER MESSAGE" in the "OPTION" menu enables users to select the timer for the interval to show the message for cleaning up the air filter. It is recommended to choose "100h" in general. Please be careful with the operating environment of the projector and the condition of air filter, especially when "200h", "300h" or "TURN OFF" is chosen. Please check and clean the air filter periodically, even if there is no message.

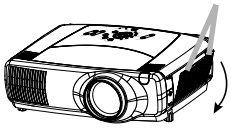
If the air filter becomes blocked by dust or others, the internal temperature will rise, which could cause malfunction, or reduce the lifetime of the projector.

If the soiling will not come off the air filter, or it becomes damaged, then it needs to be replaced. Please replace the air filter as soon as possible.

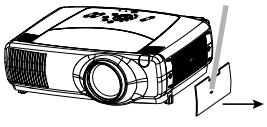
memo : When you replace the lamp, please replace also the air filter.

1. Turn off the projector, and unplug the power cord. Allow the lamp bulb to cool for at least 45 minutes.
2. After making sure that the projector has cooled adequately, remove the filter cover and air filter.
3. Apply a vacuum cleaner to the top of the filter cover and the air filter to clean.
   <u>If the soiling will not come off the air filter, or it becomes damaged, it needs to be replaced.</u>
4. Insert the cleaned air filter or a new air filter, and replace the filter cover.
5. Turn on the projector power, and reset the filter timer.
   (1) While the projector running, press the MENU button to open the menu.
   (2) Choose the “OPTION” on the menu using the ▲ / ▼ button, then press the ▶button or ENTER button.
   (3) Choose the “FILTER TIME” using the ▲ / ▼ button, then press the ▶ button, ENTER button or RESET button.
   (4) Choose the “RESET” using the ▲ button.
   memo : Incorrectly resetting of the filter timer (resetting without replacement, or neglect of resetting after replacement) will result in incorrect message functions.

Hold the release buttons of the filter cover while pulling down it.



Hold the release tab of the air filter while pulling out it.



6-5 Lamp

⚠ WARNING

HIGH VOLTAGE

HIGH TEMPERATURE

HIGH PRESSURE

The projector uses a high-pressure mercury glass lamp. The lamp can **break with a loud bang, or burn out**, if jolted or scratched, handled while hot, or worn over time.
Note that each lamp has a different lifetime, and some may burst or burn out soon after you start using them. In addition, when the bulb bursts, it is possible for **shards of glass** to fly into the lamp housing, and for **gas containing mercury** to escape from the projector's vent holes.

About disposal of a lamp • This product contains a mercury lamp; do not put in trash. Dispose of in accord with environmental laws.
For lamp recycling, go to www.lamprecycle.org. (in USA)
For product disposal, contact your local government agency or www.eiae.org (in the US) or www.epsc.ca (in Canada).

Disconnect the plug from the power outlet

- If the lamp should break (it will make a loud bang when it does), unplug the power cord from the outlet, and make sure to request a replacement lamp from your local dealer. Note that shards of glass could damage the projector's internals, or cause injury during handling, so please do not try to clean the projector or replace the lamp yourself.
- If the lamp should break (it will make a loud bang when it does), ventilate the room well, and make sure not to breathe the gas that comes out of the projector vents, or get it in your eyes or mouth.
- Before replacing the lamp, make sure the power switch is off and the power cable is not plugged in, then wait at least 45 minutes for the lamp to cool sufficiently. Handling the lamp while hot can cause burns, as well as damaging the lamp.

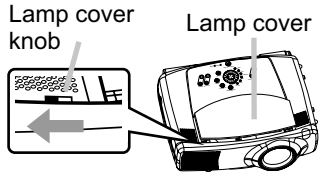
- Do not open the lamp cover while the projector is suspended from above. This is dangerous, since if the lamp's bulb has broken, the shards will fall out when the cover is opened. In addition, working in high places is dangerous, so ask your local dealer to have the lamp replaced even if the bulb is not broken.
- Do not use the projector with the lamp cover removed. At the lamp replacing, make sure that the screws are screwed in firmly. Loose screws could result in damage or injury.

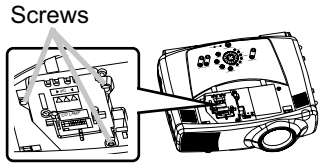
- Use only the lamp of the specified type.
- If the lamp breaks soon after the first time it is used, it is possible that there are electrical problems elsewhere besides the lamp. If this happens, contact your local dealer or a service representative.
- Handle with care: jolting or scratching could cause the lamp bulb to burst during use.
- If the indicators or a message prompts you to replace the lamp (see the section "Related Messages" and "Regarding the indicator Lamps"), replace the lamp as soon as possible. Using the lamp for long periods of time, or past the replacement date, could cause it to burst. Do not use old (used) lamps; this is a cause of breakage.

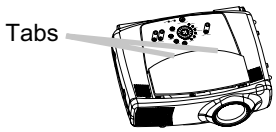
● **Replacing the Lamp**

If the indicators or a message prompts you to replace the lamp, replace the lamp as soon as possible.

1. Turn off the projector, and unplug the power cord. Allow the lamp bulb to cool for at least 45 minutes, and prepare a new lamp.
2. After making sure that the projector has cooled adequately, slide the knob of a lamp cover lock as shown in the Figure. Then, one side of the lamp cover is raised. Pull up the lamp cover and remove it, as shown in the Figure.
3. Unscrew the 3 screws, and slowly pull out the lamp by the handle. Be careful not to touch the inside of the lamp case.
4. Insert the new lamp, and tighten the 3 screws firmly to lock it in place.
5. Interlocking the 2 tabs of the lamp cover to the projector, put the lamp cover on the projector. Then push the point of the lamp cover to fix it, as shown in the Figure. Make sure that the lamp cover does' t come up.







6. Turn on the projector, and reset the lamp timer.
   (1) While the projector running, press the MENU button to open the menu.
   (2) Choose the “OPTION” on the menu using the ▲ / ▼ button, then press the ▶ button or ENTER button.
   (3) Choose the “LAMP TIME” using the ▲ / ▼ button, then press the ▶ button, ENTER button or RESET button.
   (4) Choose the “RESET” using the ▲ button.

   memo : When the lamp has been replaced after the message of "THE POWER WILL TURN OFF AFTER 0hr." is displayed, complete this operation within 10 minutes of switching power on.

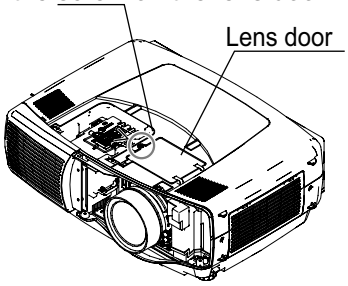
   memo : Incorrectly resetting of the lamp timer (resetting without replacement, or neglect of resetting after replacement) will result in incorrect message functions.

6-6 Lens

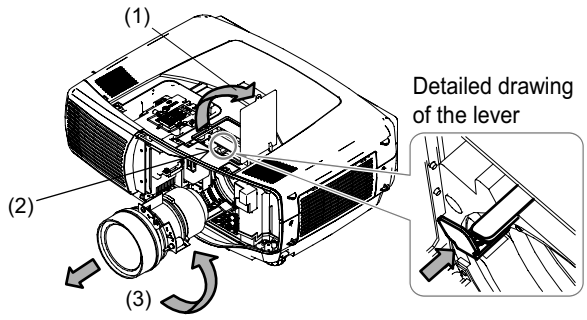
⚠WARNING
• Before replacing the projector lens, be sure to read this manual, the “User's Manual-Safety Guide” and the “Optional Lens User's Manual” of the LCD projector for use with this lens. • Do not place the lens in a location subject to direct sunlight or other strong lighting or near heat-radiating equipment. • Do not subject the lens to shocks. • Be sure to unplug the LCD projector before replacing the lens. • Do not touch the fan of the LCD projector during operation. • Before replacing the lens, be sure to turn off and unplug the LCD projector, and allow at least 45 minutes for the projector to fully cool. • When attaching, take care so that dust not enter inside.
⚠ATTENTION
• Do not touch the lens directly with your hands or fingers. This can dirty the lens and cause deterioration in image quality. • The lens is a precision optical device. Carefully handle the lens without subjecting it to shocks or vibrations. • When resting the lens on a surface, place the lens face down on a soft cloth.

● **Replacing the Lens**

1. Slide the lamp cover lock to unlock the lamp cover and then grasp the projecting part of the lamp cover to lift it open.
2. Remove the two screws on the bottom of the projector and then pull off the front panel.
3. Loosen the screw on the lens door.



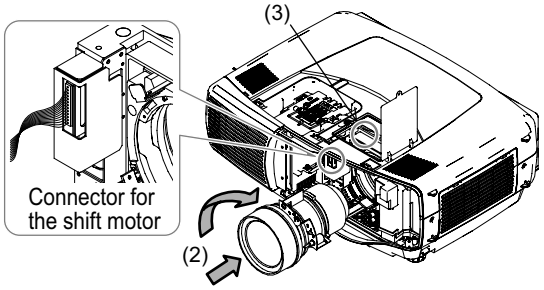
4. Remove the lens.
   (1) Open the lens door.
   (2) Press the lens release lever.
   (3) Rotate the lens counterclockwise and pull it out.



Important instructions when removing the lens:

1. Do not touch the prism area at the rear of the lens.
2. Do not touch the terminals.
3. Do not pull the wires.

5. Mount the replacement lens.
   (1) Align the red mark on the lens with the red mark on the lens holder and insert the lens into the holder.
   (2) Turn the lens clockwise until a click is heard, Attach the lens so that the red mark on the lens and the green mark on the holder are aligned.
   (3) Confirm that the lens is securely locked.
   (4) After replacing the lens, make sure that the connector for the shift motor is firmly set in place.



6. Close the lens door and tighten its screw.
7. Reattach the front panel.
8. Reattach the lamp cover to complete the lens replacement.
   (1) Align the two tabs on the lamp cover with the receiving areas on the projector.
   (2) Press the lamp cover into place.

6-7 Other care

⚠WARNING
• Please carefully read the “User’s Manual - Safety Guide”. • Before caring, make sure the power switch is off and the power cable is not plugged in. • Be cautious of high temperature. Do not touch about the lens and ventilation openings during use or immediately after use prevent a burn.
⚠CAUTION
• Incorrect care could have adverse influence such as discoloration, peeling paint, etc. • Do not use cleaner or chemicals other than those listed below, including benzene and paint thinner. • Do not use aerosols or sprays. • Do not polish or wipe with hard objects.

● Caring for the inside of the projector

In order to ensure the safe use of the projector, please recommend the customer to clean and inspect it about once every year.

● Caring for the lens

1. Turn off the projector, and unplug the power cord.
2. Lightly wipe the lens with a commercially available lens-cleaning wipe. Do not touch the lens directly with your hand.

● Caring for the cabinet and remote control

1. Turn off the projector, and unplug the power cord.
2. Wipe lightly with gauze or a soft cloth.
   memo : If soiling is severe, dip soft cloth in water or a neutral cleaner dilute in water, and wipe lightly after wringing well. Then, wipe lightly with a soft, dry cloth.

6-8 Notice of AUTO adjustment

Use of AUTO adjustment with the image through RGB input optimizes V_POSI, H_POSI, H_SIZE and H_PHASE automatically.

In case that projected image has dark tone around its peripheral, AUTO operation sometimes makes artifacts in the image, shifts capture area and so on. Those failures are caused by period of image data is not exactly distinguished to period of blanking on signal processing.

To avoid such phenomena, AUTO function should be used with the full size picture that has bright tone on its peripheral.

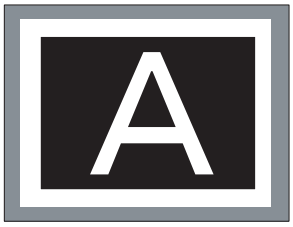


Image when AUTO operates correctly

Image when AUTO fails.

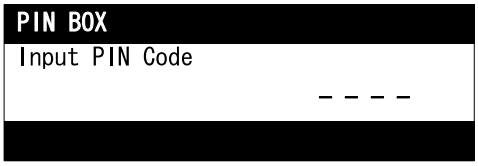
- Noting image of top or bottom lines.
- Shift of the image to East or West.
- Artifacts on image. Etc.

Note

1) The phenomenon at the failure of AUTO adjustment depends on resolution of input source, scene of picture etc.
2) There is no failure above in AUTO with video source through VIDEO, S-VIDEO or COMPONENT input. The reason is why recognition of input signal's standard does not need to search the capture range from input signal itself.

6-9 PIN LOCK System

If the following PIN BOX menu appears after power on the projector, the PIN LOCK system has been activated. Under such a condition, key operations and signal displaying are inhibited. To open the PIN LOCK system, we need to input the correct 4 digits PIN CODE. If correct PIN CODE is not input in 5 min., the lamp will be automatically turned off.



PIN BOX

Returning repaired unit

Use the Master PIN code. See the paragraph of Releasing the PIN LOCK system inactivation.

Swap unit/Returned unit

Inactivate the PIN LOCK system. See the paragraph of the PIN LOCK system inactivation.

Releasing the PIN LOCK System

When the PIN BOX menu is displayed, sequentially enter the codes with remote controller as follows. In accordance with remote controller button entry, "∗" mark appears in the PIN BOX menu.

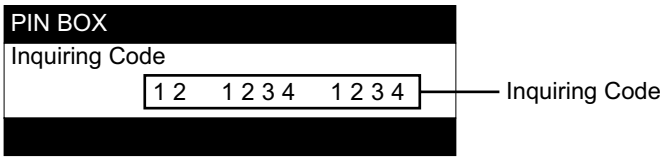
Master PIN codes

1st entry code: Press the "MENU" button.
2nd entry code: Press the "▼" button.
3rd entry code: Press the "KEYSTONE" button.
4th entry code: Press the "▲" button.

Note: The Master PIN codes can be used up to 30 times. The codes cannot be used thereafter. If the Master PIN codes cannot be used, see the paragraph of the PIN LOCK system inactivation.

The PIN LOCK System inactivation

1. When the PIN BOX menu is displayed, press "RESET" for 3 seconds or more in order to get the ID Inquiring Code.



PIN BOX (ID Inquiring Code)

2. Send HITACHI sales company the Inquiring code (10 digits) to inquire the correct PIN code.
3. With the PIN BOX menu displayed, input the correct PIN code. Enter the correct PIN CODE that HITACHI sales company informed.
4. Open menu and select "TURN OFF" from the PIN LOCK items in the OPTION menu. Then the PIN BOX menu appears.
5. Input the correct PIN code in the PIN BOX menu.
6. And then, the OPTION menu appears.

After the PIN LOCK system is inactivated, the PIN BOX is no longer displayed in the OPTION menu.
If the PIN LOCK items are kept displaying, the PIN LOCK system is not inactivated yet. Input the correct PIN CODE again.

6-10 Related messages

When the unit's power is ON, messages such as those shown below may be displayed. When any such message is displayed on the screen, please respond as described below.

Message	Description
CHANGE THE LAMP AFTER REPLACING LAMP, RESET THE LAMP TIMER. (*1)	Lamp usage time is approaching 2000 hours. (*2) Preparation of a new lamp, and an early lamp change is recommended. After you have changed the lamp, please be sure to reset the lamp timer.
CHANGE THE LAMP AFTER REPLACING LAMP, RESET THE LAMP TIMER. THE POWER WILL TURN OFF AFTER ** hr. (*1)	Lamp usage time is approaching 2000 hours. (*2) A lamp change within ** hours is recommended. When lamp usage reaches 2000 hours, the power will automatically be turned OFF. Please change the lamp by referring to the "Lamp" section of this manual. After you have changed the lamp, please be sure to reset the lamp timer.
CHANGE THE LAMP AFTER REPLACING LAMP, RESET THE LAMP TIMER. THE POWER WILL TURN OFF AFTER 0 hr.	As lamp use has reached 2000 hours (*2), the power will soon be automatically turned OFF. Please immediately turn the power off, and change the lamp by referring to the "Lamp" section of this manual. After you have changed the lamp, please be sure to reset the lamp timer.
NO INPUT IS DETECTED ON ***	There is no input signal. Please confirm the signal input connection, and the status of the signal source.
SYNC IS OUT OF RANGE ON *** fH *****kHz fV *****Hz	The horizontal or vertical wavelength of the inputted signal is outside of the response parameters of this unit. Please confirm the specs for this unit or the signal source specs.
REMINDER ***HRS PASSED AFTER THE LAST FILTER CHECK. FILTER MAINTENANCE IS ESSENTIAL TO REMOVE WARNING MESSAGE, RESET FILTER TIMER. SEE MANUAL FURTHER INFO.	The time the filter timer has counted has reached the interval time set by the "FILER MESSAGE" of "SERVICE" item in the OPTION menu. Please clear or change the air filter by referring to the section “Air Filter”. After caring for the air filter, please be sure to reset the filter timer.
PLEASE CHECK THAT THE FILTER HAS BEEN CLEANED. FAILURE TO CLEAN MAY RESULT IN DAMAGE TO THE PROJECTOR. SEE MANUAL FURTHER INFO.	The internal portion temperature is rising. Please turn the power OFF, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation of the following items, and then turn the power on again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 35°C?

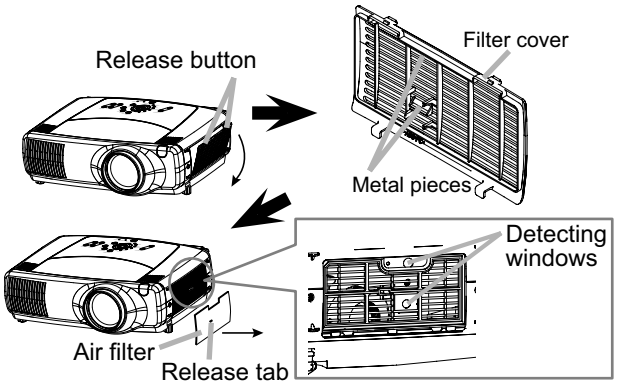
Note: (*1) • Although this message will be automatically disappeared after around 3 minutes, it will be reappeared every time the power is turned ON.

(*2) • Lamps have a finite product life. Lamps are characterized by the fact that, after long hours of usage, a lamp will no longer light up, or the lamp will break or burst, etc. This unit is equipped with an automatic shut-down function, such that the power will automatically be turned OFF when lamp usage time has reached 2,000 hours. Please be aware, however, that among lamp types, there are major differences in product lifetimes; a lamp may thus fail to light even prior to the functioning of the automatic shut-down function of this unit.

● **Caring of the Metal Pieces of filter cover and the dust-detecting windows**

The metal pieces of filter cover and the dust-detecting windows should be cleaned for normal operation of the optical dust detecting system. Please pay attention not to remain fiber or fragment of cloth inside the duct.

1. Turn off the projector, and unplug the power cord.
2. After making sure that the projector has cooled adequately, remove the filter cover.
   Hold the release buttons of the filter cover, while pulling down it.
3. Wipe the metal pieces of the filter cover by using a swab or a soft cloth.
4. Remove the air filter.
   Hold the release tab of the air filter, while pulling out it.
5. Wipe the dust-detecting windows by using a soft cloth.
6. Replace the air filter and filter cover.



6-11 Regarding the indicator lamps

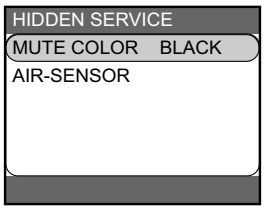
⚠ATTENTION

• When the interior portion has become overheated, for safety purposes, the power source may be automatically turned off, and the indicator lamps may also be turned off. In such a case, press the "○" (OFF) side of the power switch, and wait at least 45 minutes. After the unit has sufficiently cooled down, please make confirmation of the attachment state of the lamp and lamp cover, and then turn the power on again.

Lighting and flashing of the POWER indicator, the LAMP indicator, and the TEMP indicator have the meanings as described in the Table below. Please respond in accordance with the instructions within the Table.

POWER indicator	LAMP indicator	TEMP indicator	Description
Lighting in orange	Turned off	Turned off	The projector is in a standby state.
Blinking in green	Turned off	Turned off	The projector is warming up. Please wait.
Lighting in green	Turned off	Turned off	The projector is in an ON state. Ordinary operations may be performed.
Blinking in orange	Turned off	Turned off	The projector is cooling down. Please wait.
Blinking in red	-	-	The projector is cooling down. A certain error has been detected. Please wait until the STANDBY/ON indicator finishes blink, and then perform the proper response measure using the item descriptions below as reference.
Lighting or blinking in red	Lighting in red	Turned off	The lamp does not light, and there is a possibility that interior portion has become heated. Please turn the power off, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation of the following items, and then turn the power on again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 35°C? If the same indication is displayed after the treatment, please change the lamp by referring to the section “Lamp”.
Lighting or blinking in red	Blinking in red	Turned off	Either there is no lamp and/or lamp cover, or either of these has not been properly fixed. Please turn the power off, and allow the unit to cool down at least 45 minutes. After the projector has sufficiently cooled down, please make confirmation of the attachment state of the lamp and lamp cover, and then turn the power on again.
Lighting or blanking in red	Turned off	Blinking in red	The cooling fan is not operating. Please turn the power off, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation that no foreign matter has become caught in the fan, etc., and then turn the power on again.
Lighting or blinking in red	Turned off	Lighting in red	There is a possibility that the interior portion has become heated. Please turn the power off, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation of the following items, and then turn the power on again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 35°C?
Lighting in green	Alternative blinking in the red		There is a possibility that the interior portion has become overcooled. Please use the unit within the usage temperature parameters (0°C to 35°C). After the treatment, resent the power to ON.
Lighting in green	Simultaneous blinking in red		It is time to clean the air filter, or there is no Filter cover. Please immediately turn the power OFF, and clean or change the air filter by referring to the "Air Filter" section of this manual. After you have cleaned or changed the lamp, please be sure to reset the filter timer. After the treatment, resent the power to ON.

6-12 HIDDEN SERVICE menu

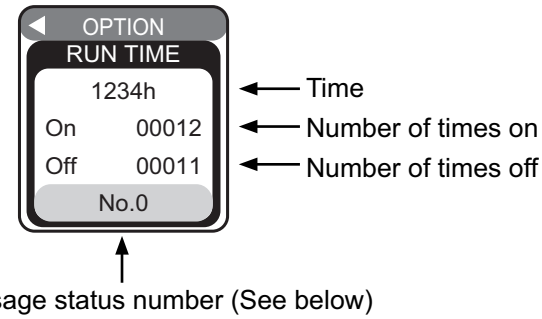


To display the OSD for “HIDDEN SERVICE” menu set up.

When using control panel	When using remote control
1. Display the menu by the “MENU” button. 2. Select the “OPTION” on the menu. 3. Continue press the button “◀” first, then press the button “◀” together with “RESET”, and hold for 3 seconds.	1. Display the menu by the “MENU” button. 2. Select the “OPTION” on the menu. 3. Press the “MAGNIFY OFF” button. Next hold the “MAGNIFY OFF” button for 3 seconds.

6-13 Set operating time display method (accumulated lamp time display method)

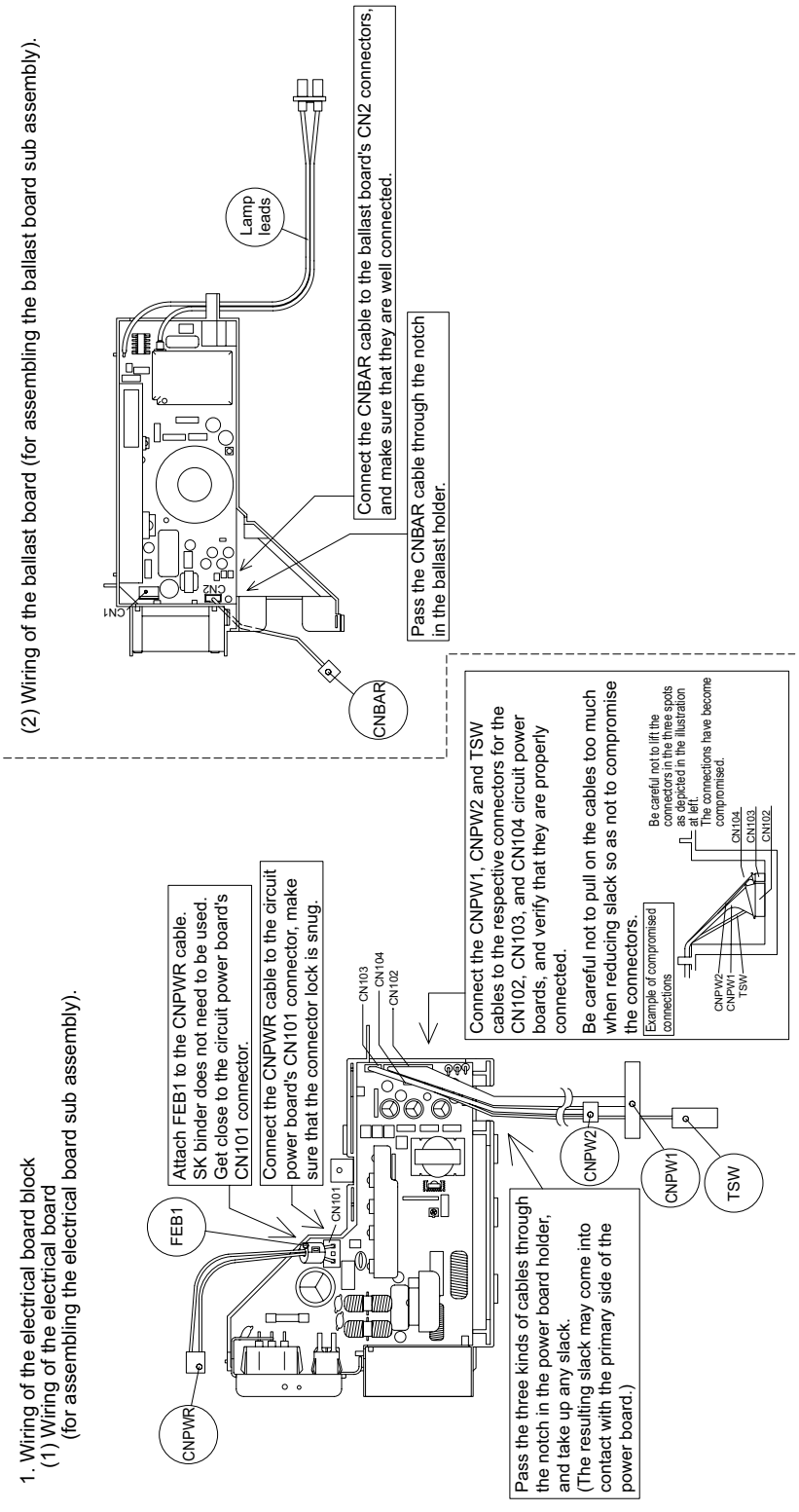
1. Select [OPTION] from the [MENU] display, then select [LAMP TIME].
2. Press the [▶], [Enter] or [RESET] button.
3. Press the [RESET] button once, then press [KEYSTONE] for 3 seconds or more to display the screen shown below. (The menu will close after 10 seconds if there are no further operations.)
4. Use “▲” or “▼” to select the usage status number. (The usage status is as shown below.)



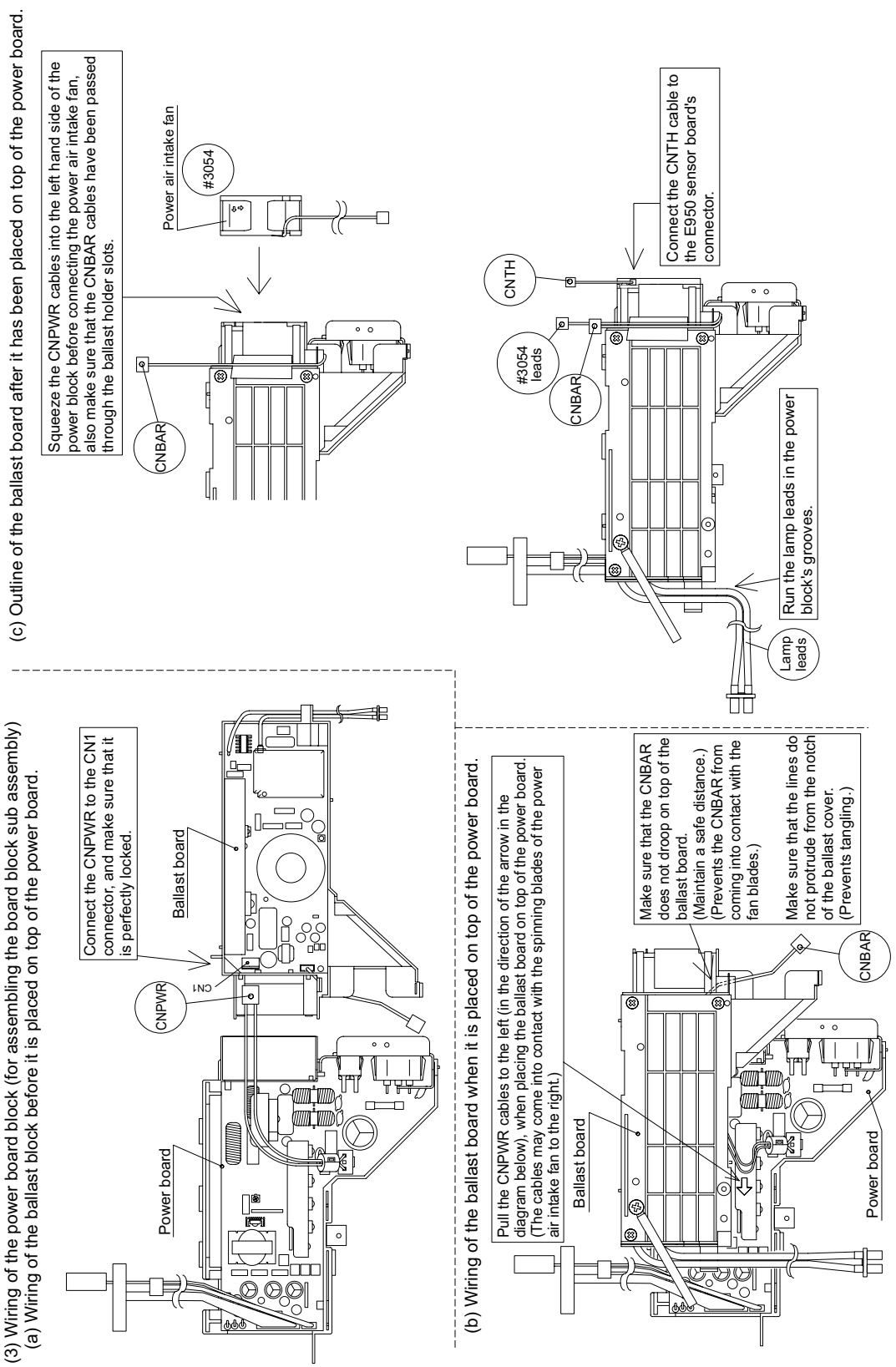
Usage status number

0 ..... Total usage status
1 ..... Current usage status
2 ..... Usage status before first reset
3 ..... Usage status before second reset
||
9 ..... Usage status before eighth reset
10 ..... Total time(hrs.) of AC power-on.

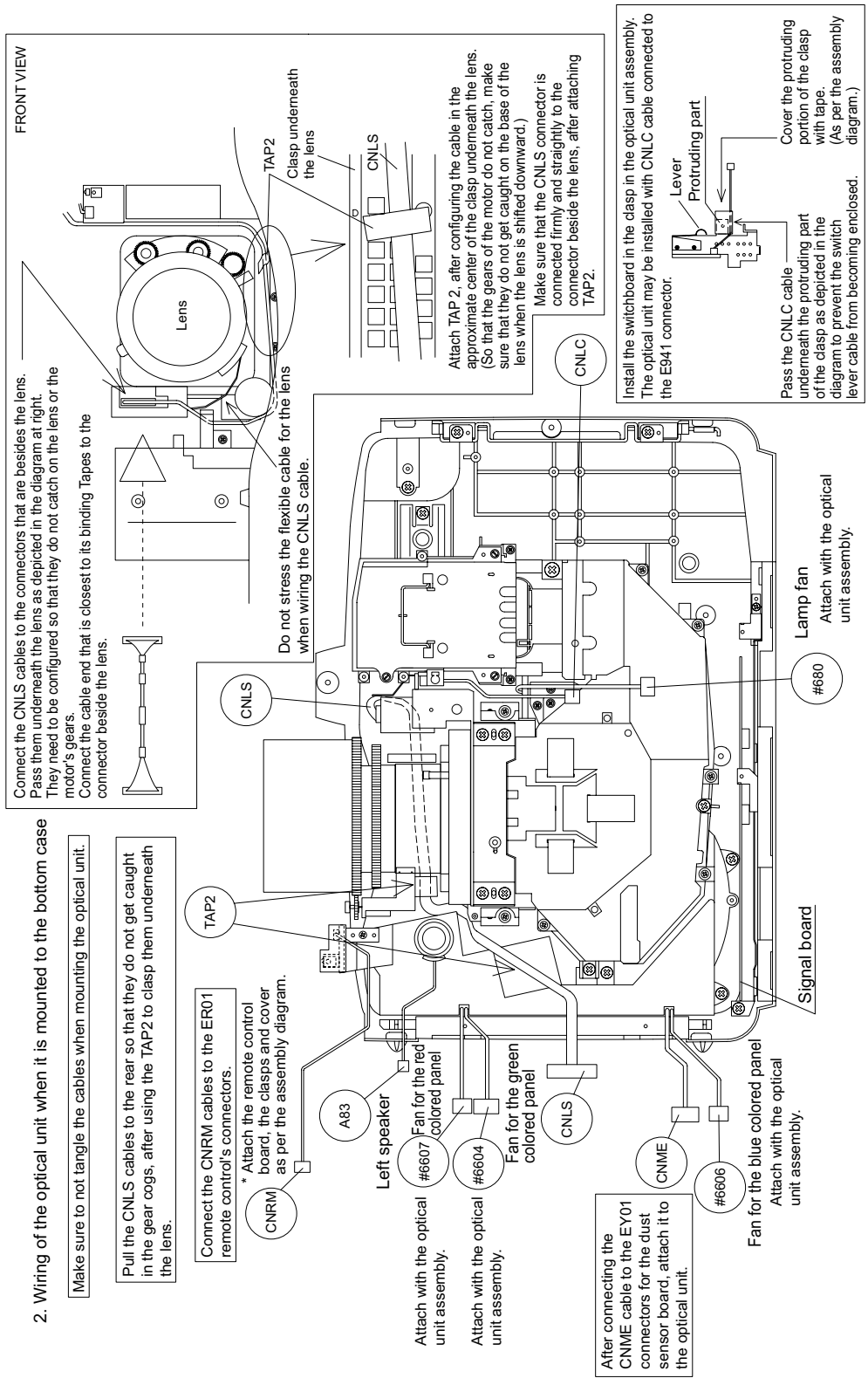
7. Wiring diagram


1. Wiring of the electrical board block
(1) Wiring of the electrical board
(for assembling the electrical board sub assembly).
(2) Wiring of the ballast board (for assembling the ballast board sub assembly).
Lamp leads
Connect the CNBAR cable to the ballast board's CN2 connectors, and make sure that they are well connected.
Pass the CNBAR cable through the notch in the ballast holder.
CNBAR
CN2
Attach FEB1 to the CNPWR cable. SK binder does not need to be used. Get close to the circuit power board's CN101 connector.
Connect the CNPWR cable to the circuit power board's CN101 connector, make sure that the connector lock is snug.
FEB1
CN101
CN103
CN104
CN102
CNPWR
Connect the CNPW1, CNPW2 and TSW cables to the respective connectors for the CN102, CN103, and CN104 circuit power boards, and verify that they are properly connected.
Be careful not to pull on the cables too much when reducing slack so as not to compromise the connectors.
Example of compromised connections
Be careful not to lift the connectors in the three spots as depicted in the illustration at left. The connections have become compromised.
CNPW2
CNPW1
TSW
CN104
CN103
CN102
Pass the three kinds of cables through the notch in the power board holder, and take up any slack. (The resulting slack may come into contact with the primary side of the power board.)
CNPW2
CNPW1
TSW

Wiring diagram 1

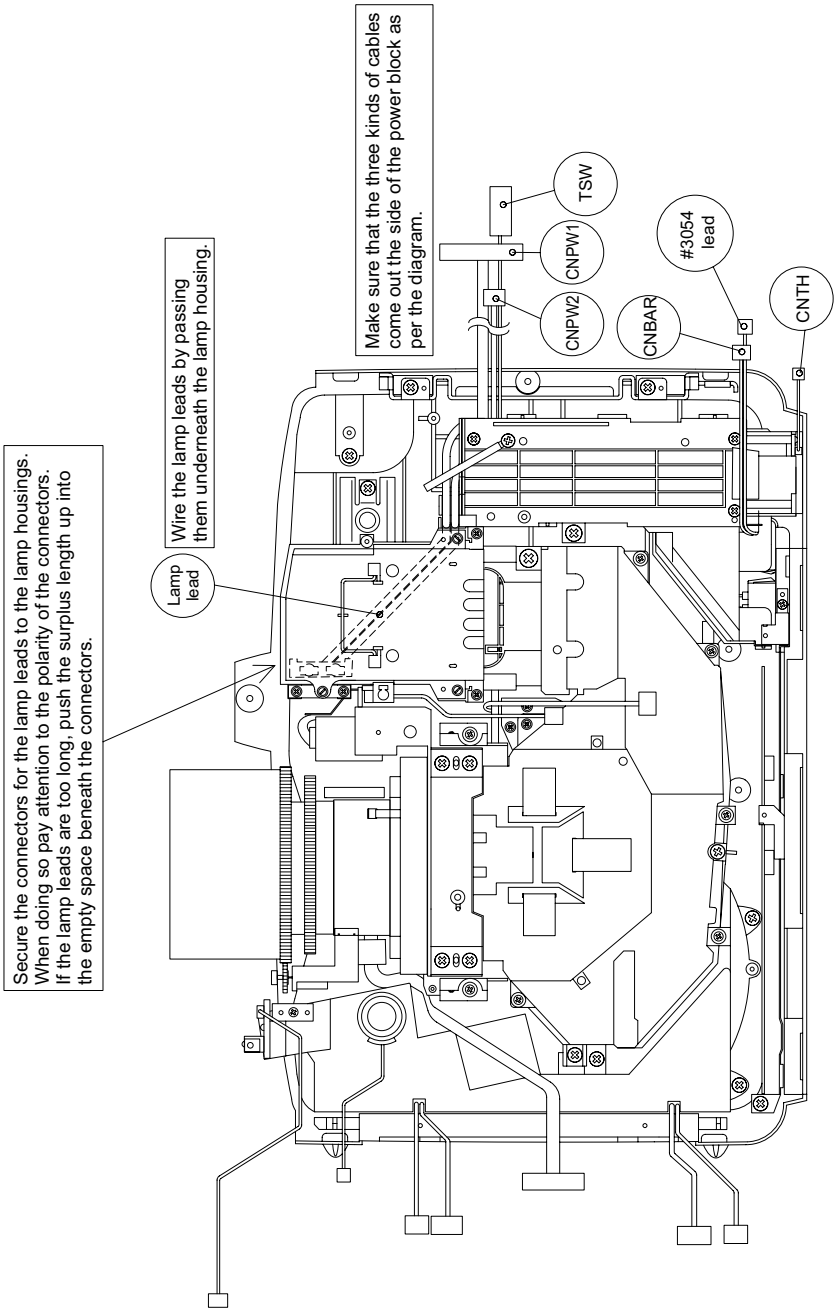

(3) Wiring of the power board block (for assembling the board block sub assembly)
(a) Wiring of the ballast block before it is placed on top of the power board.
Connect the CNPWR to the CN1 connector, and make sure that it is perfectly locked.
Ballast board
CNPWR
CN1
Power board
(b) Wiring of the ballast board when it is placed on top of the power board.
Pull the CNPWR cables to the left (in the direction of the arrow in the diagram below), when placing the ballast board on top of the power board. (The cables may come into contact with the spinning blades of the power air intake fan to the right.)
Ballast board
Make sure that the CNBAR does not droop on top of the ballast board. (Maintain a safe distance.) (Prevents the CNBAR from coming into contact with the fan blades.)
Make sure that the lines do not protrude from the notch of the ballast cover. (Prevents tangling.)
CNBAR
Power board
(c) Outline of the ballast board after it has been placed on top of the power board.
Squeeze the CNPWR cables into the left hand side of the power block before connecting the power air intake fan, also make sure that the CNBAR cables have been passed through the ballast holder slots.
Power air intake fan
#3054
CNBAR
CNTH
#3054 leads
CNBAR
Connect the CNTH cable to the E950 sensor board's connector.
Run the lamp leads in the power block's grooves.
Lamp leads

Wiring diagram 2


2. Wiring of the optical unit when it is mounted to the bottom case
Make sure to not tangle the cables when mounting the optical unit.
Pull the CNLS cables to the rear so that they do not get caught in the gear cogs, after using the TAP2 to clasp them underneath the lens.
Connect the CNRM cables to the ER01 remote control's connectors.
* Attach the remote control board, the clasps and cover as per the assembly diagram.
Connect the CNLS cables to the connectors that are besides the lens. Pass them underneath the lens as depicted in the diagram at right. They need to be configured so that they do not catch on the lens or the motor's gears. Connect the cable end that is closest to its binding Tapes to the connector beside the lens.
FRONT VIEW
Lens
TAP2
Clasp underneath the lens
CNLS
Attach TAP 2, after configuring the cable in the approximate center of the clasp underneath the lens. (So that the gears of the motor do not catch, make sure that they do not get caught on the base of the lens when the lens is shifted downward.)
Make sure that the CNLS connector is connected firmly and straightly to the connector beside the lens, after attaching TAP2.
Do not stress the flexible cable for the lens when wiring the CNLS cable.
CNLC
Install the switchboard in the clasp in the optical unit assembly. The optical unit may be installed with CNLC cable connected to the E941 connector.
Lever
Protruding part
Pass the CNLC cable underneath the protruding part of the clasp as depicted in the diagram to prevent the switch lever cable from becoming enclosed.
Cover the protruding portion of the clasp with tape. (As per the assembly diagram.)
TAP2
CNLS
CNRM
A83
Left speaker
Attach with the optical unit assembly.
#6607
Fan for the red colored panel
Attach with the optical unit assembly.
#6604
Fan for the green colored panel
CNLS
After connecting the CNME cable to the EY01 connectors for the dust sensor board, attach it to the optical unit.
CNME
#6606
Fan for the blue colored panel
Attach with the optical unit assembly.
Signal board
#680
Lamp fan
Attach with the optical unit assembly.

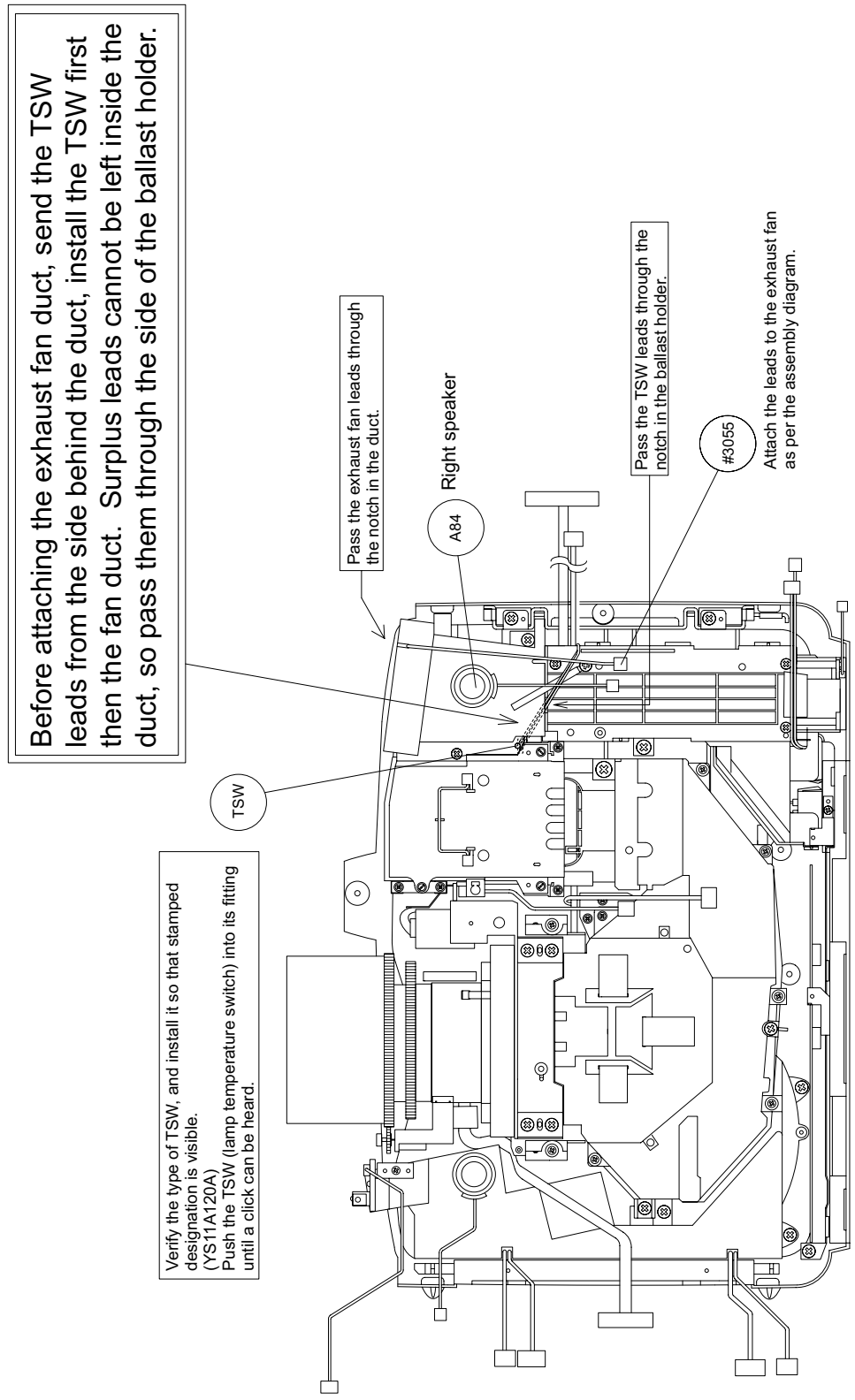
Wiring diagram 3

3. Wiring of bottom case when the power block is mounted to it.


Secure the connectors for the lamp leads to the lamp housings.
When doing so pay attention to the polarity of the connectors.
If the lamp leads are too long, push the surplus length up into
the empty space beneath the connectors.
Lamp lead
Wire the lamp leads by passing them underneath the lamp housing.
Make sure that the three kinds of cables come out the side of the power block as per the diagram.
TSW
CNPW1
CNPW2
CNBAR
#3054 lead
CNTH

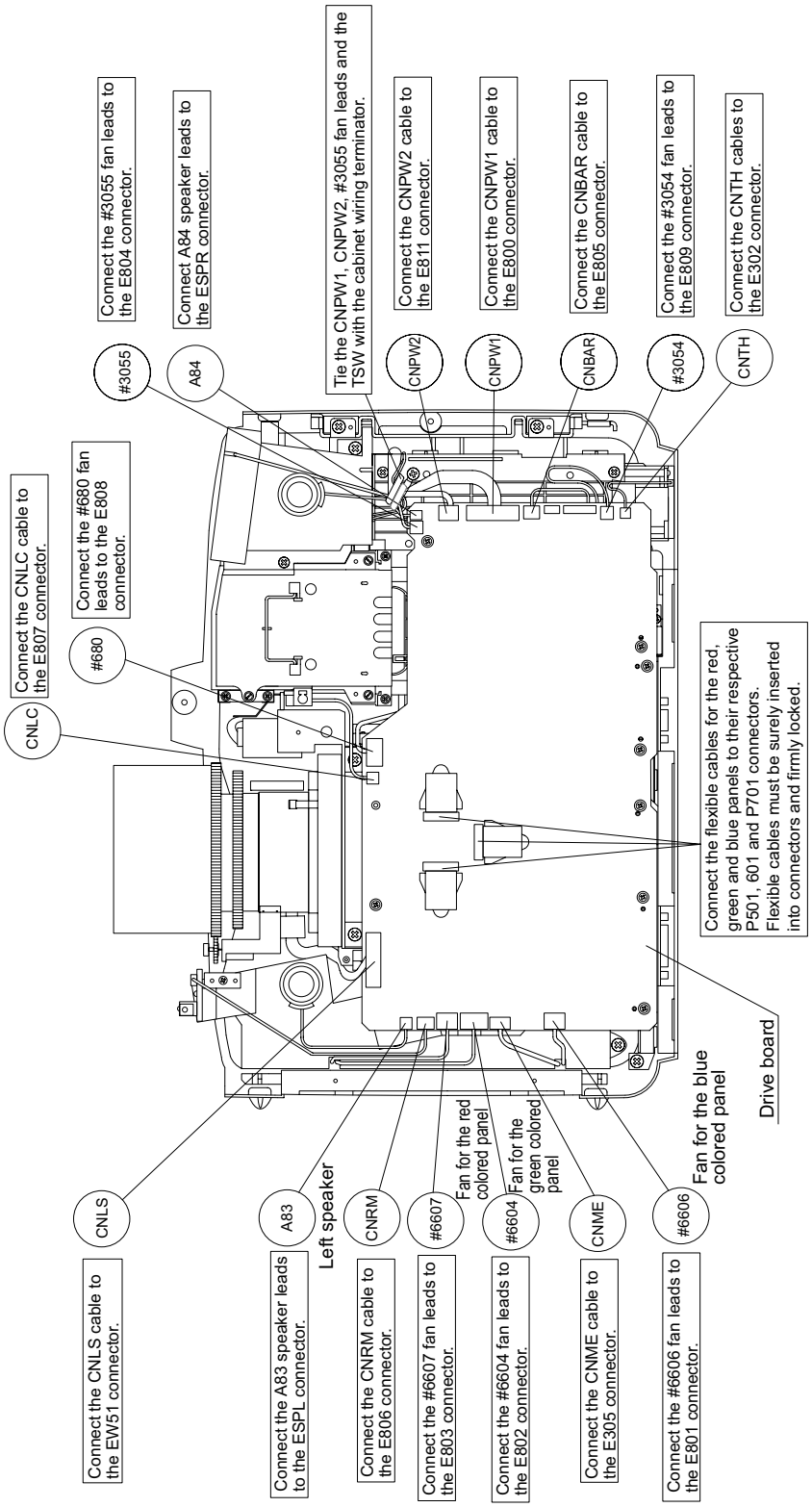
Wiring diagram 4

4. Wiring of the bottom case when the exhaust fan holder is mounted to it.


Before attaching the exhaust fan duct, send the TSW leads from the side behind the duct, install the TSW first then the fan duct. Surplus leads cannot be left inside the duct, so pass them through the side of the ballast holder.
TSW
Verify the type of TSW, and install it so that stamped designation is visible.
(YS11A120A)
Push the TSW (lamp temperature switch) into its fitting until a click can be heard.
Pass the exhaust fan leads through the notch in the duct.
A84
Right speaker
Pass the TSW leads through the notch in the ballast holder.
#3055
Attach the leads to the exhaust fan as per the assembly diagram.

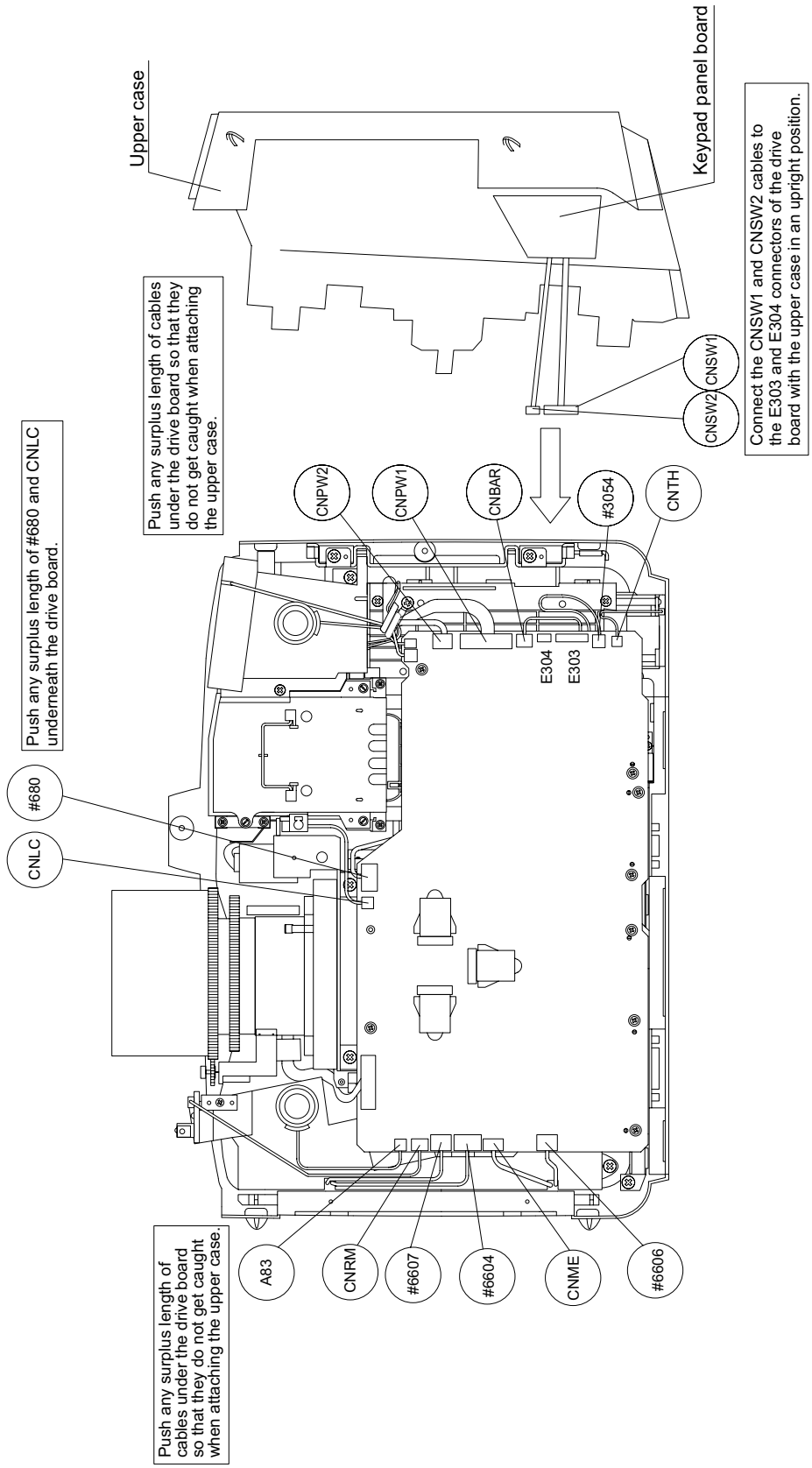
Wiring diagram 5

5. Wiring of the drive board when it is mounted


Connect the #3055 fan leads to the E804 connector.
Connect A84 speaker leads to the ESPR connector.
Tie the CNPW1, CNPW2, #3055 fan leads and the TSW with the cabinet wiring terminator.
Connect the CNPW2 cable to the E811 connector.
Connect the CNPW1 cable to the E800 connector.
Connect the CNBAR cable to the E805 connector.
Connect the #3054 fan leads to the E809 connector.
Connect the CNTH cables to the E302 connector.
#3055
A84
CNPW2
CNPW1
CNBAR
#3054
CNTH
Connect the CNLC cable to the E807 connector.
Connect the #680 fan leads to the E808 connector.
#680
CNLC
Connect the flexible cables for the red, green and blue panels to their respective P501, 601 and P701 connectors. Flexible cables must be surely inserted into connectors and firmly locked.
Drive board
CNLS
A83
CNRM
#6607
#6604
CNME
#6606
Connect the CNLS cable to the EW51 connector.
Connect the A83 speaker leads to the ESPL connector.
Left speaker
Connect the CNRM cable to the E806 connector.
Connect the #6607 fan leads to the E803 connector.
Fan for the red colored panel
Connect the #6604 fan leads to the E802 connector.
Fan for the green colored panel
Connect the CNME cable to the E305 connector.
Connect the #6606 fan leads to the E801 connector.
Fan for the blue colored panel

Wiring diagram 6

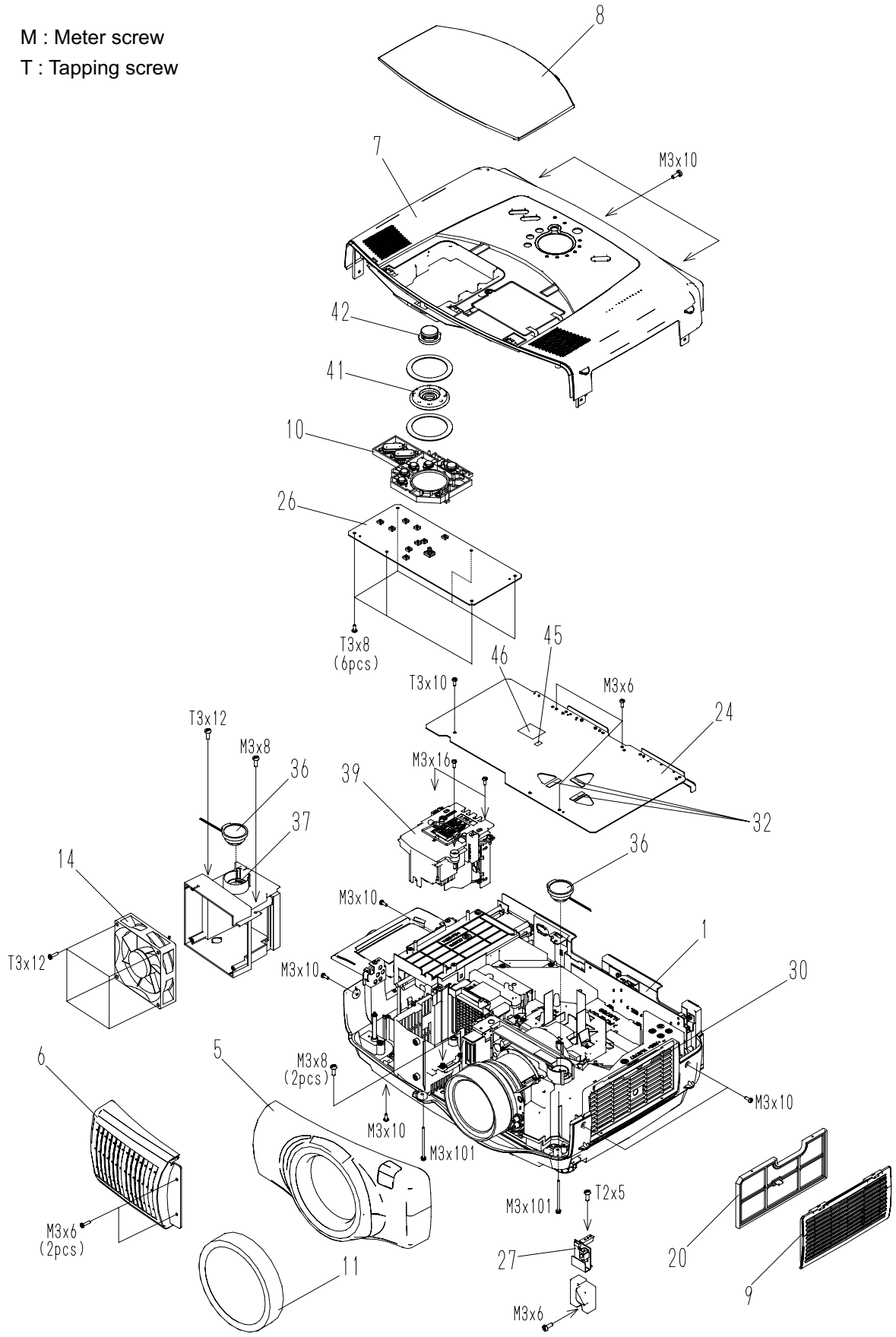
6. Wiring prior to the attachment of the upper case


Upper case
Keypad panel board
Push any surplus length of #680 and CNLC underneath the drive board.
Push any surplus length of cables under the drive board so that they do not get caught when attaching the upper case.
Connect the CNSW1 and CNSW2 cables to the E303 and E304 connectors of the drive board with the upper case in an upright position.
#680
CNLC
CNPW2
CNPW1
CNBAR
#3054
CNTH
CNSW1
CNSW2
E304
E303
A83
CNRM
#6607
#6604
CNME
#6606
Push any surplus length of cables under the drive board so that they do not get caught when attaching the upper case.

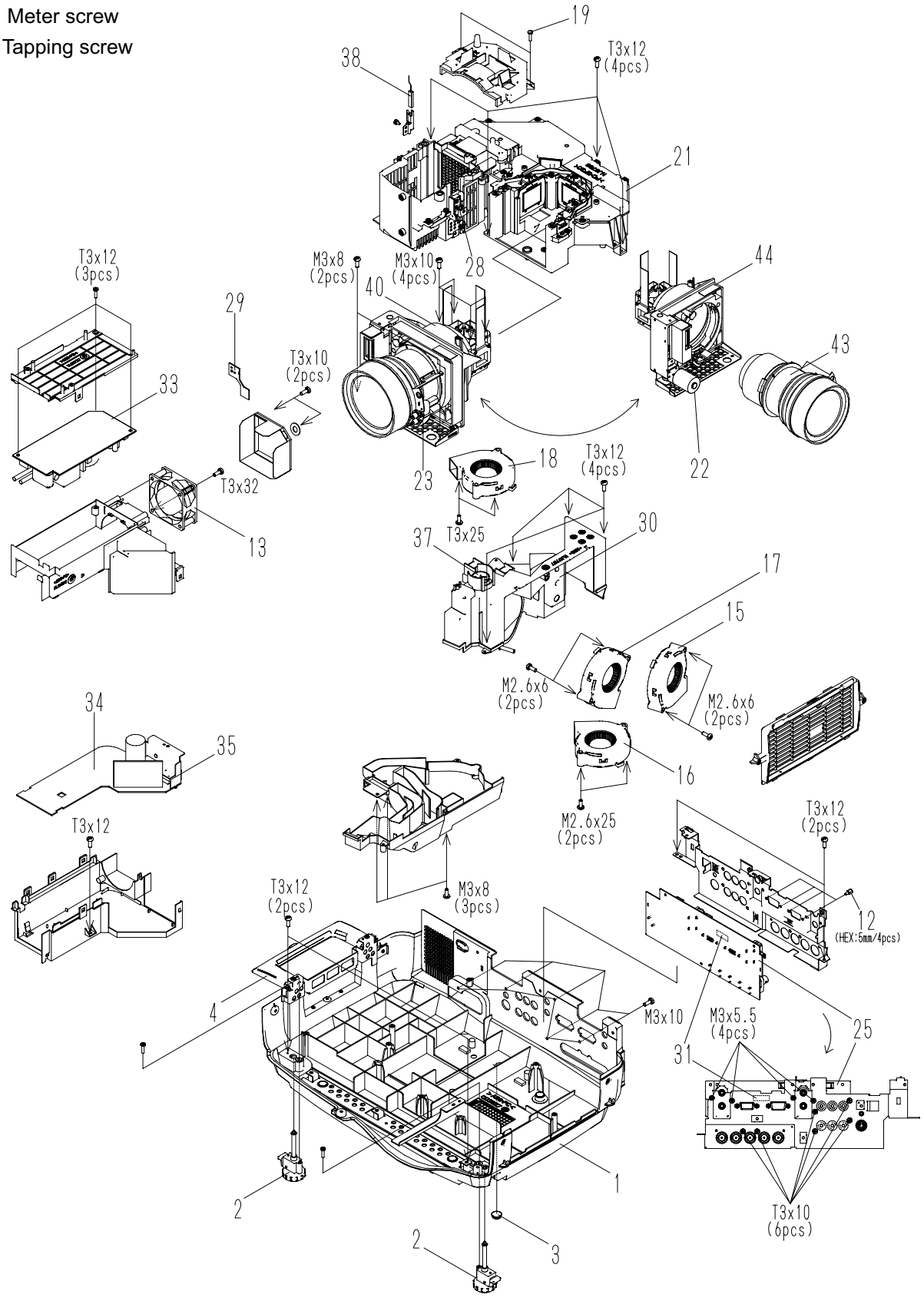
Wiring diagram 7

8. Disassembly diagram

M : Meter screw
T : Tapping screw

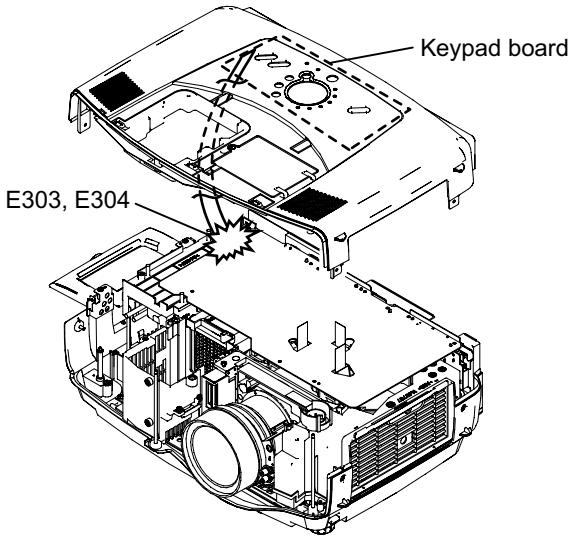


M : Meter screw
T : Tapping screw



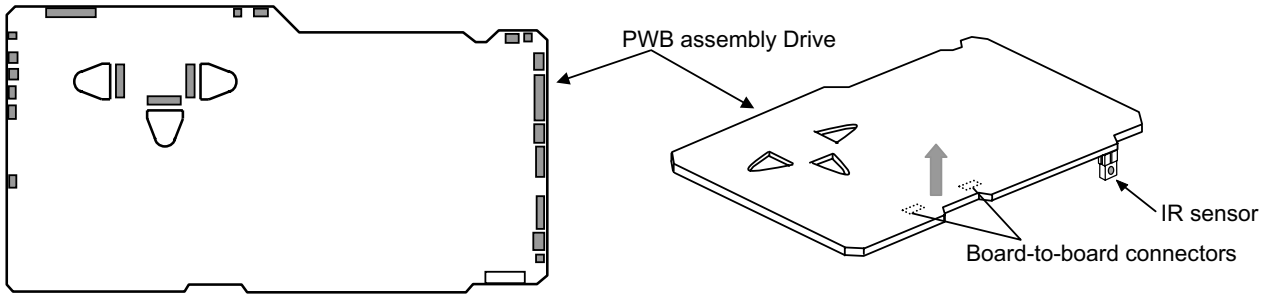
● Cautions when disassembling or re-assembling the projector

The Keypad board is installed on the Upper case. When removing, lift carefully without excessive force to prevent damaging cables and connectors.

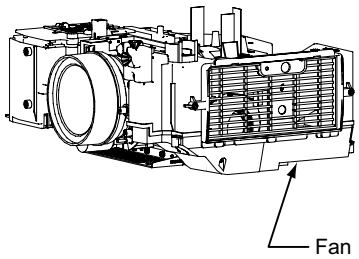


When removing the Drive board, there might be damage to the flexible cables of LCD panels and two board-to-board connectors. Handle them with care when disassembling.

(1) Before remove the Drive board, disconnect the all cables from connectors on it.
(2) Lift up the Drive board straightly to disconnect two board-to-board connectors on the opposite side of it, after taking off the screws of it.
(3) When you remove/install the PWB assembly Drive from/to the unit, make sure that the IR sensor on the Drive board stands vertically.



The fan cooling sirocco fan is easily damaged; therefore, use care to avoid applying any impact after removing the optical unit.

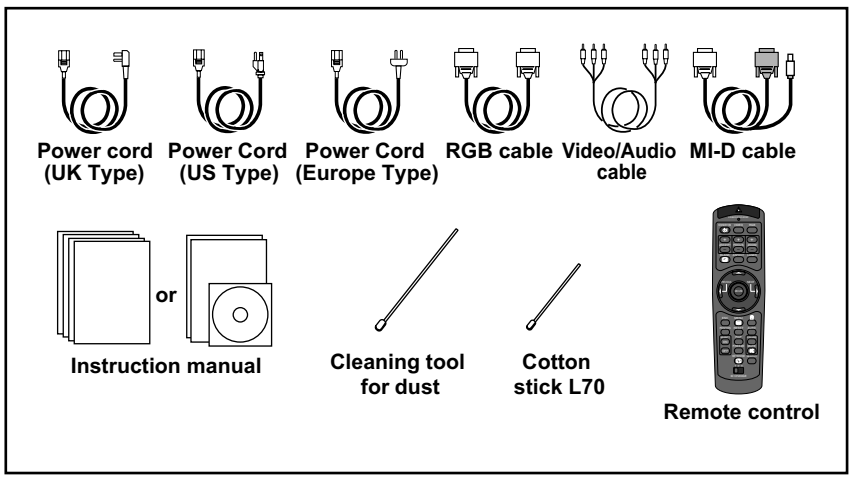


9. Replacement Parts list

PRODUCT SAFETY NOTE : Components marked with a ⚠ have special characteristics important to safety. Before replacing any of there components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the projector through improper servicing.

● **CP-SX1350**

SYMBOL NO.	PARTS NO.	DESCRIPTION	SYMBOL NO.	PARTS NO.	DESCRIPTION
1	QD51339	BOTTOM CASE ASS'Y	29	JP06925	PWB ASS'Y SENSOR
2	QJ01061	FRONT FOOT ASSY	30	JP06926	PWB ASS'Y DUST SENSOR
3	PE00181	RUBBER FOOT	31	CK31602R	EL4332CS
4	PV00382	HANDLE	32	EA02311R	CPC36 LOW CONNECTOR
5	QD50029	FRONT BEZEL R ASS'Y	⚠ 33	HA01251	POWER UNIT(BALLAST)
6	QD36949	FRONT BEZEL L ASS'Y	⚠ 34	HA01114	POWER UNIT(CIRCUIT)
7	QD51198	UPPER CASE ASS'Y	⚠ 35	2722449	FUSE 8A
8	PH35713	LAMP DOOR ASS'Y	36	GK01211	SPEAKER
9	QD36982	FILTER COVER ASSY	37	MU01932	SPEAKER CUSHION
10	PC05506	CONTROL BUTTON	⚠ 38	FH00321	THEREMAL SW ASSY
11	PH33633	LENS CAP ASSY	39	DT00601	LAMP UNIT ASS'Y
12	MJ02432	D-SUB SCREW	40	UX24221	LCD/LENS PRISM ASS'Y(SERVICE or REPAIR)
⚠ 13	GS00801	DC FAN(INTAKE)	41	PC05524	DIAL BUTTON ASSY
⚠ 14	GS00772	DC FAN(EXHAUST)	42	PC05545	CENTER BUTTON ASSY
⚠ 15	GS00971	DC FAN(PANEL G)	43	KQ03682	LENS ASS'Y
⚠ 16	GS00972	DC FAN(PANEL B)	44	UX24231	LCD/PRISM ASS'Y(SERVICE or REPAIR)
⚠ 17	GS00973	DC FAN(PANEL R)	45	CK01971R	MM1113XF
⚠ 18	GS00991	DC FAN(LAMP)	46	CK39002U	TC90A92AFG
19	3702442	PLASTIC RIVET	⚠	EV01662	POWER SUPPLY CORD(US TYPE) W/CORE
20	NJ08081	FILTER FRAME ASS'Y	⚠	EV01672	POWER SUPPLY CORD(EUROPE TYPE) W/CORE
21	UE24531	DICHROIC OPTICS UNIT	⚠	EV01682	POWER SUPPLY CORD(UK TYPE) W/CORE
22	GP00291	SHIFT MECH.MOT.ASSY		QT46771	INSTRUCTION MANUAL W/CD-ROM
23	GP00301	PJ LENS MOT.ASSY		EW06661	RGB-D CABLE(15PIN MALE TO 15PIN MALE)
24	JP08761	PWB ASS'Y DRIVE		EW06031	3 CONDUCTOR VIDEO/AUDIO CABLE
25	JP08581	PWB ASS'Y SIGNAL		EZ01661	M1-D CABLE
26	JP06928	PWB ASS'Y KEYBOARD		HL02003	REMOTE CONTROL UNIT
27	JP09433	PWB ASS'Y REMOTE CONT.		NX05741	CLEANING TOOL FOR DUST
28	JP06924	PWB ASS'Y LIMIT SW		NX05742	COTTON STICK L70



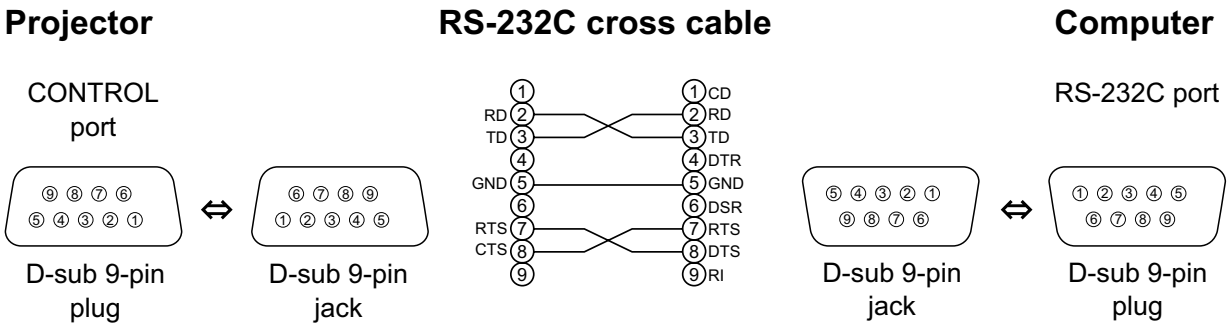
10. RS-232C communication

● Connecting the cable

(1) Turn off the projector and the computer power supplies.

(2) Connect the CONTROL port of the projector with a RS-232C port of the computer by a RS-232C cable. Use the cable that fulfills the specification shown in the following figure.

(3) Turn on the computer power supply and after the computer has started up, turn on the projector power supply.



● Communications setting

19200bps, 8N1

1. Protocol

Consist of header (7 bytes) + command data (6 bytes).

2. Header

BE + EF + 03 + 06 + 00 + CRC_low + CRC_high

CRC_low : Lower byte of CRC flag for command data

CRC_high : Upper byte of CRC flag for command data

3. Command data

Command data chart

byte_0	byte_1	byte_2	byte_3	byte_4	byte_5
Action		Type		Setting code	
low	high	low	high	low	high

Action (byte_0 - 1)

Action	Classification	Content
1	SET	Change setting to desired value.
2	GET	Read projector internal setup value.
4	INCREMENT	Increment setup value by 1.
5	DECREMENT	Decrement setup value by 1.
6	EXECUTE	Run a command.

Requesting projector status (Get command)

(1) Send the request code Header + Command data (‘02H’+‘00H’+ type (2 bytes)+‘00H’+‘00H’) from the computer to the projector.
(2) The projector returns the response code ‘1DH’+ data (2 bytes) to the computer.

Changing the projector settings (Set command)

(1) Send the setting code Header + Command data (‘01H’+‘00H’+ type (2 bytes) + setting code (2 bytes)) from the computer to the projector.
(2) The projector changes the setting based on the above setting code.
(3) The projector returns the response code ‘06H’ to the computer.

Using the projector default settings (Reset Command)

(1) The computer sends the default setting code Header + Command data (‘06H’+‘00H’+ type (2 bytes) + ‘00H’+‘00H’) to the projector.
(2) The projector changes the specified setting to the default value.
(3) The projector returns the response code ‘06H’ to the computer.

Increasing the projector setting value (Increment command)

(1) The computer sends the increment code Header + Command data (‘04H’+‘00H’+ type (2 bytes) +‘00H’+ ‘00H’) to the projector.
(2) The projector in creases the setting value on the above setting code.
(3) The projector returns the response code ‘06H’ to the computer.

Decreasing the projector setting value (Decrement command)

(1) The computer sends the decrement code Header + Command data (‘05H’+‘00H’+ type (2 bytes) +‘00H’ + ‘00H’) to the projector.
(2) The projector decreases the setting value on the above setting code.
(3) The projector returns the response code ‘06H’ to the computer.

When the projector cannot understand the received command.

When the projector cannot understand the received command, the error code ‘15H’ is sent back to the computer.
Sometimes the projector cannot properly receive the command. In such a case, the command is not executed and the error code ‘15H’ is sent back to the computer. If this error code is returned, send the same command again.

When the projector cannot execute the received command.

When the projector cannot execute the received command, the error code ‘1cH’ + ‘xxxxH’ is sent back to the computer. When the data length is greater than indicated by the data length code, the projector ignore the excess data code.
Conversely when the data length is shorter than indicated by the data length code, an error code will be returned to the computer.

NOTE • Operation cannot be guaranteed when the projector receives an undefined command or data.
• Provide an interval of at least 40ms between the response code and any other code.
• The projector outputs test data when the power supply is switched ON, and when the lamp is lit. Ignore this data.
• Commands are not accepted during warm-up.

● Command data chart

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Keystone V	Get		BE EF	03	06 00	B9 D3	02 00	07 20	00 00
	Increment		BE EF	03	06 00	DF D3	04 00	07 20	00 00
	Decrement		BE EF	03	06 00	0E D2	05 00	07 20	00 00
Keystone V Reset	Execute		BE EF	03	06 00	08 D0	06 00	0C 70	00 00
Keystone H	Get		BE EF	03	06 00	E9 D0	02 00	0B 20	00 00
	Increment		BE EF	03	06 00	8F D0	04 00	0B 20	00 00
	Decrement		BE EF	03	06 00	5E D1	05 00	0B 20	00 00
Keystone H Reset	Execute		BE EF	03	06 00	98 D8	06 00	20 70	00 00
Brightness	Get		BE EF	03	06 00	89 D2	02 00	03 20	00 00
	Increment		BE EF	03	06 00	EF D2	04 00	03 20	00 00
	Decrement		BE EF	03	06 00	3E D3	05 00	03 20	00 00
Brightness Reset	Execute		BE EF	03	06 00	58 D3	06 00	00 70	00 00
Contrast	Get		BE EF	03	06 00	FD D3	02 00	04 20	00 00
	Increment		BE EF	03	06 00	9B D3	04 00	04 20	00 00
	Decrement		BE EF	03	06 00	4A D2	05 00	04 20	00 00
Contrast Reset	Execute		BE EF	03	06 00	A4 D2	06 00	01 70	00 00
Aspect	Set	4:3	BE EF	03	06 00	9E D0	01 00	08 20	00 00
		16:9	BE EF	03	06 00	0E D1	01 00	08 20	01 00
		SMALL	BE EF	03	06 00	FE D1	01 00	08 20	02 00
		NORMAL	BE EF	03	06 00	5E DD	01 00	08 20	10 00
		REAL	BE EF	03	06 00	5E D7	01 00	08 20	08 00
	Get		BE EF	03	06 00	AD D0	02 00	08 20	00 00
Whisper	Set	NORMAL	BE EF	03	06 00	3B 23	01 00	00 33	00 00
		WHISPER	BE EF	03	06 00	AB 22	01 00	00 33	01 00
	Get		BE EF	03	06 00	08 23	02 00	00 33	00 00
Mirror	Set	Normal	BE EF	03	06 00	C7 D2	01 00	01 30	00 00
		H Inverse	BE EF	03	06 00	57 D3	01 00	01 30	01 00
		V Inverse	BE EF	03	06 00	A7 D3	01 00	01 30	02 00
		H&V Inverse	BE EF	03	06 00	37 D2	01 00	01 30	03 00
	Get		BE EF	03	06 00	F4 D2	02 00	01 30	00 00

(This table is continued to the following page.)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Language	Set	ENGLISH	BE EF	03	06 00	F7 D3	01 00	05 30	00 00
		FRANÇAIS	BE EF	03	06 00	67 D2	01 00	05 30	01 00
		DEUTSCH	BE EF	03	06 00	97 D2	01 00	05 30	02 00
		ESPAÑOL	BE EF	03	06 00	07 D3	01 00	05 30	03 00
		ITALIANO	BE EF	03	06 00	37 D1	01 00	05 30	04 00
		NORSK	BE EF	03	06 00	A7 D0	01 00	05 30	05 00
		NEDERLANDS	BE EF	03	06 00	57 D0	01 00	05 30	06 00
		PORTUGUÊS	BE EF	03	06 00	C7 D1	01 00	05 30	07 00
		日本語	BE EF	03	06 00	37 D4	01 00	05 30	08 00
		简体中文	BE EF	03	06 00	A7 D5	01 00	05 30	09 00
		繁體中文	BE EF	03	06 00	37 DE	01 00	05 30	10 00
		한글	BE EF	03	06 00	57 D5	01 00	05 30	0A 00
		SVENSKA	BE EF	03	06 00	C7 D4	01 00	05 30	0B 00
		РУССКИЙ	BE EF	03	06 00	F7 D6	01 00	05 30	0C 00
		SUOMI	BE EF	03	06 00	67 D7	01 00	05 30	0D 00
		POLSKI	BE EF	03	06 00	97 D7	01 00	05 30	0E 00
		TÜRKÇE	BE EF	03	06 00	07 D6	01 00	05 30	0F 00
	Get		BE EF	03	06 00	C4 D3	02 00	05 30	00 00
Gamma	Set	NORMAL	BE EF	03	06 00	C7 F0	01 00	A1 30	00 00
		CINEMA	BE EF	03	06 00	57 F1	01 00	A1 30	01 00
		DYNAMIC	BE EF	03	06 00	A7 F1	01 00	A1 30	02 00
		CUSTOM	BE EF	03	06 00	07 FD	01 00	A1 30	10 00
	Get		BE EF	03	06 00	F4 F0	02 00	A1 30	00 00
Custom Gamma	Get		BE EF	03	06 00	08 F1	02 00	A0 30	00 00
	Increment		BE EF	03	06 00	6E F1	04 00	A0 30	00 00
	Decrement		BE EF	03	06 00	BF F0	05 00	A0 30	00 00
Custom Color Temp	Set	USER	BE EF	03	06 00	3B F8	01 00	B0 30	10 00
		HIGH	BE EF	03	06 00	0B F5	01 00	B0 30	03 00
		MIDDLE	BE EF	03	06 00	9B F4	01 00	B0 30	02 00
		LOW	BE EF	03	06 00	6B F4	01 00	B0 30	01 00
	Get		BE EF	03	06 00	C8 F5	02 00	B0 30	00 00
Custom User R	Set	50	BE EF	03	06 00	57 F7	01 00	B1 30	05 00
		60	BE EF	03	06 00	C7 F6	01 00	B1 30	04 00
		70	BE EF	03	06 00	F7 F4	01 00	B1 30	03 00
		80	BE EF	03	06 00	67 F5	01 00	B1 30	02 00
		90	BE EF	03	06 00	97 F5	01 00	B1 30	01 00
		100	BE EF	03	06 00	07 F4	01 00	B1 30	00 00
	Get		BE EF	03	06 00	34 F4	02 00	B1 30	00 00
Custom User G	Set	50	BE EF	03	06 00	13 F7	01 00	B2 30	05 00
		60	BE EF	03	06 00	83 F6	01 00	B2 30	04 00
		70	BE EF	03	06 00	B3 F4	01 00	B2 30	03 00
		80	BE EF	03	06 00	23 F5	01 00	B2 30	02 00
		90	BE EF	03	06 00	D3 F5	01 00	B2 30	01 00
		100	BE EF	03	06 00	43 F4	01 00	B2 30	00 00
	Get		BE EF	03	06 00	70 F4	02 00	B2 30	00 00

(This table is continued to the following page.)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Custom User B	Set	50	BE EF	03	06 00	EF F6	01 00	B3 30	05 00
		60	BE EF	03	06 00	7F F7	01 00	B3 30	04 00
		70	BE EF	03	06 00	4F F5	01 00	B3 30	03 00
		80	BE EF	03	06 00	DF F4	01 00	B3 30	02 00
		90	BE EF	03	06 00	2F F4	01 00	B3 30	01 00
		100	BE EF	03	06 00	BF F5	01 00	B3 30	00 00
	Get		BE EF	03	06 00	8C F5	02 00	B3 30	00 00
Color Balance R	Get		BE EF	03	06 00	01 D2	02 00	05 20	00 00
	Increment		BE EF	03	06 00	67 D2	04 00	05 20	00 00
	Decrement		BE EF	03	06 00	B6 D3	05 00	05 20	00 00
Color Balance R Reset	Execute		BE EF	03	06 00	94 D3	06 00	05 70	00 00
Color Balance G	Get		BE EF	03	06 00	B5 D7	02 00	12 20	00 00
	Increment		BE EF	03	06 00	D3 D7	04 00	12 20	00 00
	Decrement		BE EF	03	06 00	02 D6	05 00	12 20	00 00
Color Balance G Reset	Execute		BE EF	03	06 00	04 DB	06 00	29 70	00 00
Color Balance B	Get		BE EF	03	06 00	45 D2	02 00	06 20	00 00
	Increment		BE EF	03	06 00	23 D2	04 00	06 20	00 00
	Decrement		BE EF	03	06 00	F2 D3	05 00	06 20	00 00
Color Balance B Reset	Execute		BE EF	03	06 00	D0 D3	06 00	06 70	00 00
Sharpness	Get		BE EF	03	06 00	F1 72	02 00	01 22	00 00
	Increment		BE EF	03	06 00	97 72	04 00	01 22	00 00
	Decrement		BE EF	03	06 00	46 73	05 00	01 22	00 00
Sharpness Reset	Execute		BE EF	03	06 00	C4 D0	06 00	09 70	00 00
Color	Get		BE EF	03	06 00	B5 72	02 00	02 22	00 00
	Increment		BE EF	03	06 00	D3 72	04 00	02 22	00 00
	Decrement		BE EF	03	06 00	02 73	05 00	02 22	00 00
Color Reset	Execute		BE EF	03	06 00	80 D0	06 00	0A 70	00 00
Tint	Get		BE EF	03	06 00	49 73	02 00	03 22	00 00
	Increment		BE EF	03	06 00	2F 73	04 00	03 22	00 00
	Decrement		BE EF	03	06 00	FE 72	05 00	03 22	00 00
Tint Reset	Execute		BE EF	03	06 00	7C D1	06 00	0B 70	00 00
My Memory Load	Set	1	BE EF	03	06 00	0E D7	01 00	14 20	00 00
		2	BE EF	03	06 00	9E D6	01 00	14 20	01 00
		3	BE EF	03	06 00	6E D6	01 00	14 20	02 00
		4	BE EF	03	06 00	FE D7	01 00	14 20	03 00
My Memory Save	Set	1	BE EF	03	06 00	F2 D6	01 00	15 20	00 00
		2	BE EF	03	06 00	62 D7	01 00	15 20	01 00
		3	BE EF	03	06 00	92 D7	01 00	15 20	02 00
		4	BE EF	03	06 00	02 D6	01 00	15 20	03 00

(This table is continued to the following page.)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
V Position	Get		BE EF	03	06 00	0D 83	02 00	00 21	00 00
	Increment		BE EF	03	06 00	6B 83	04 00	00 21	00 00
	Decrement		BE EF	03	06 00	BA 82	05 00	00 21	00 00
V Position Reset	Execute		BE EF	03	06 00	E0 D2	06 00	02 70	00 00
H Position	Get		BE EF	03	06 00	F1 82	02 00	01 21	00 00
	Increment		BE EF	03	06 00	97 82	04 00	01 21	00 00
	Decrement		BE EF	03	06 00	46 83	05 00	01 21	00 00
H Position Reset	Execute		BE EF	03	06 00	1C D3	06 00	03 70	00 00
H Phase	Get		BE EF	03	06 00	49 83	02 00	03 21	00 00
	Increment		BE EF	03	06 00	2F 83	04 00	03 21	00 00
	Decrement		BE EF	03	06 00	FE 82	05 00	03 21	00 00
H Size	Get		BE EF	03	06 00	B5 82	02 00	02 21	00 00
	Increment		BE EF	03	06 00	D3 82	04 00	02 21	00 00
	Decrement		BE EF	03	06 00	02 83	05 00	02 21	00 00
H Size Reset	Execute		BE EF	03	06 00	68 D2	06 00	04 70	00 00
Over Scan	Get		BE EF	03	06 00	91 70	02 00	09 22	00 00
	Increment		BE EF	03	06 00	F7 70	04 00	09 22	00 00
	Decrement		BE EF	03	06 00	26 71	05 00	09 22	00 00
Over Scan Reset	Execute		BE EF	03	06 00	EC D9	06 00	27 70	00 00
Color Space	Set	AUTO	BE EF	03	06 00	0E 72	01 00	04 22	00 00
		RGB	BE EF	03	06 00	9E 73	01 00	04 22	01 00
		SMPTE240	BE EF	03	06 00	6E 73	01 00	04 22	02 00
		REC709	BE EF	03	06 00	FE 72	01 00	04 22	03 00
		REC601	BE EF	03	06 00	CE 70	01 00	04 22	04 00
	Get		BE EF	03	06 00	3D 72	02 00	04 22	00 00
Component	Set	COMPONENT	BE EF	03	06 00	4A D7	01 00	17 20	00 00
		SCART RGB	BE EF	03	06 00	DA D6	01 00	17 20	01 00
	Get		BE EF	03	06 00	79 D7	02 00	17 20	00 00
Video Format	Set	AUTO	BE EF	03	06 00	9E 75	01 00	00 22	0A 00
		NTSC	BE EF	03	06 00	FE 71	01 00	00 22	04 00
		PAL	BE EF	03	06 00	6E 70	01 00	00 22	05 00
		SECAM	BE EF	03	06 00	6E 75	01 00	00 22	09 00
		NTSC 4.43	BE EF	03	06 00	5E 72	01 00	00 22	02 00
		M-PAL	BE EF	03	06 00	FE 74	01 00	00 22	08 00
		N-PAL	BE EF	03	06 00	0E 71	01 00	00 22	07 00
	Get		BE EF	03	06 00	0D 73	02 00	00 22	00 00
3D-YCS	Set	TURN OFF	BE EF	03	06 00	E6 70	01 00	0A 22	00 00
		TURN ON	BE EF	03	06 00	76 71	01 00	0A 22	01 00
	Get		BE EF	03	06 00	D5 70	02 00	0A 22	00 00

(This table is continued to the following page.)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Video NR	Set	LOW	BE EF	03	06 00	26 72	01 00	06 22	01 00
		MIDDLE	BE EF	03	06 00	D6 72	01 00	06 22	02 00
		HIGH	BE EF	03	06 00	46 73	01 00	06 22	03 00
	Get		BE EF	03	06 00	85 73	02 00	06 22	00 00
Auto Adjust	Execute		BE EF	03	06 00	91 D0	06 00	0A 20	00 00
Auto off	Get		BE EF	03	06 00	08 86	02 00	10 31	00 00
	Increment		BE EF	03	06 00	6E 86	04 00	10 31	00 00
	Decrement		BE EF	03	06 00	BF 87	05 00	10 31	00 00
Auto Search	Set	TURN OFF	BE EF	03	06 00	B6 D6	01 00	16 20	00 00
		TURN ON	BE EF	03	06 00	26 D7	01 00	16 20	01 00
	Get		BE EF	03	06 00	85 D6	02 00	16 20	00 00
Blank Color	Set	My Screen	BE EF	03	06 00	FB CA	01 00	00 30	20 00
		Original	BE EF	03	06 00	FB E2	01 00	00 30	40 00
		Blue	BE EF	03	06 00	CB D3	01 00	00 30	03 00
		White	BE EF	03	06 00	6B D0	01 00	00 30	05 00
		Black	BE EF	03	06 00	9B D0	01 00	00 30	06 00
	Get		BE EF	03	06 00	08 D3	02 00	00 30	00 00
Blank on/off	Set	TURN OFF	BE EF	03	06 00	FB D8	01 00	20 30	00 00
		TURN ON	BE EF	03	06 00	6B D9	01 00	20 30	01 00
	Get		BE EF	03	06 00	C8 D8	02 00	20 30	00 00
Startup	Set	My Screen	BE EF	03	06 00	CB CB	01 00	04 30	20 00
		Original	BE EF	03	06 00	0B D2	01 00	04 30	00 00
		TURN OFF	BE EF	03	06 00	9B D3	01 00	04 30	01 00
	Get		BE EF	03	06 00	38 D2	02 00	04 30	00 00
Menu Position V	Get		BE EF	03	06 00	40 D7	02 00	16 30	00 00
	Increment		BE EF	03	06 00	26 D7	04 00	16 30	00 00
	Decrement		BE EF	03	06 00	F7 D6	05 00	16 30	00 00
Menu Position V Reset	Execute		BE EF	03	06 00	A8 C7	06 00	44 70	00 00
Menu Position H	Get		BE EF	03	06 00	04 D7	02 00	15 30	00 00
	Increment		BE EF	03	06 00	62 D7	04 00	15 30	00 00
	Decrement		BE EF	03	06 00	B3 D6	05 00	15 30	00 00
Menu Position H Reset	Execute		BE EF	03	06 00	DC C6	06 00	43 70	00 00
Message	Set	TURN OFF	BE EF	03	06 00	8F D6	01 00	17 30	00 00
		TURN ON	BE EF	03	06 00	1F D7	01 00	17 30	01 00
	Get		BE EF	03	06 00	BC D6	02 00	17 30	00 00

(This table is continued to the following page.)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Volume	Get		BE EF	03	06 00	31 D3	02 00	01 20	00 00
	Increment		BE EF	03	06 00	57 D3	04 00	01 20	00 00
	Decrement		BE EF	03	06 00	86 D2	05 00	01 20	00 00
Mute	Set	TURN OFF	BE EF	03	06 00	46 D3	01 00	02 20	00 00
		TURN ON	BE EF	03	06 00	D6 D2	01 00	02 20	01 00
	Get		BE EF	03	06 00	75 D3	02 00	02 20	00 00
Lamp Time	Get		BE EF	03	06 00	C2 FF	02 00	90 10	00 00
Lamp Time Reset	Execute		BE EF	03	06 00	58 DC	06 00	30 70	00 00
Filter Time	Get		BE EF	03	06 00	C2 F0	02 00	A0 10	00 00
Filter Time Reset	Execute		BE EF	03	06 00	98 C6	06 00	40 70	00 00
Magnify	Get		BE EF	03	06 00	7C D2	02 00	07 30	00 00
	Increment		BE EF	03	06 00	1A D2	04 00	07 30	00 00
	Decrement		BE EF	03	06 00	CB D3	05 00	07 30	00 00
Freeze	Set	Normal	BE EF	03	06 00	83 D2	01 00	02 30	00 00
		Freeze	BE EF	03	06 00	13 D3	01 00	02 30	01 00
	Get		BE EF	03	06 00	B0 D2	02 00	02 30	00 00
Power	Set	TURN OFF	BE EF	03	06 00	2A D3	01 00	00 60	00 00
		TURN ON	BE EF	03	06 00	BA D2	01 00	00 60	01 00
	Get		BE EF	03	06 00	19 D3	02 00	00 60	00 00
			(Example Return) 00 00 (Off) 01 00 (On) 02 00 (Cool down)						
Input Source	Set	M1-D	BE EF	03	06 00	0E D2	01 00	00 20	03 00
		RGB	BE EF	03	06 00	FE D2	01 00	00 20	00 00
		BNC	BE EF	03	06 00	3E D0	01 00	00 20	04 00
		Video	BE EF	03	06 00	6E D3	01 00	00 20	01 00
		S-Video	BE EF	03	06 00	9E D3	01 00	00 20	02 00
		Component	BE EF	03	06 00	AE D1	01 00	00 20	05 00
	Get		BE EF	03	06 00	CD D2	02 00	00 20	00 00
Error Status	Get		BE EF	03	06 00	D9 D8	02 00	20 60	00 00
			(Example of Return) 00 00 (Normal) 01 00 (Cover-error) 02 00 (Fan-error) 03 00 (Lamp-error) 04 00 (Temp-error) 05 00 (Air flow-error) 06 00 (Lamp-Time-over) 07 00 (Cool-error) 08 00 (Filter-Error)						

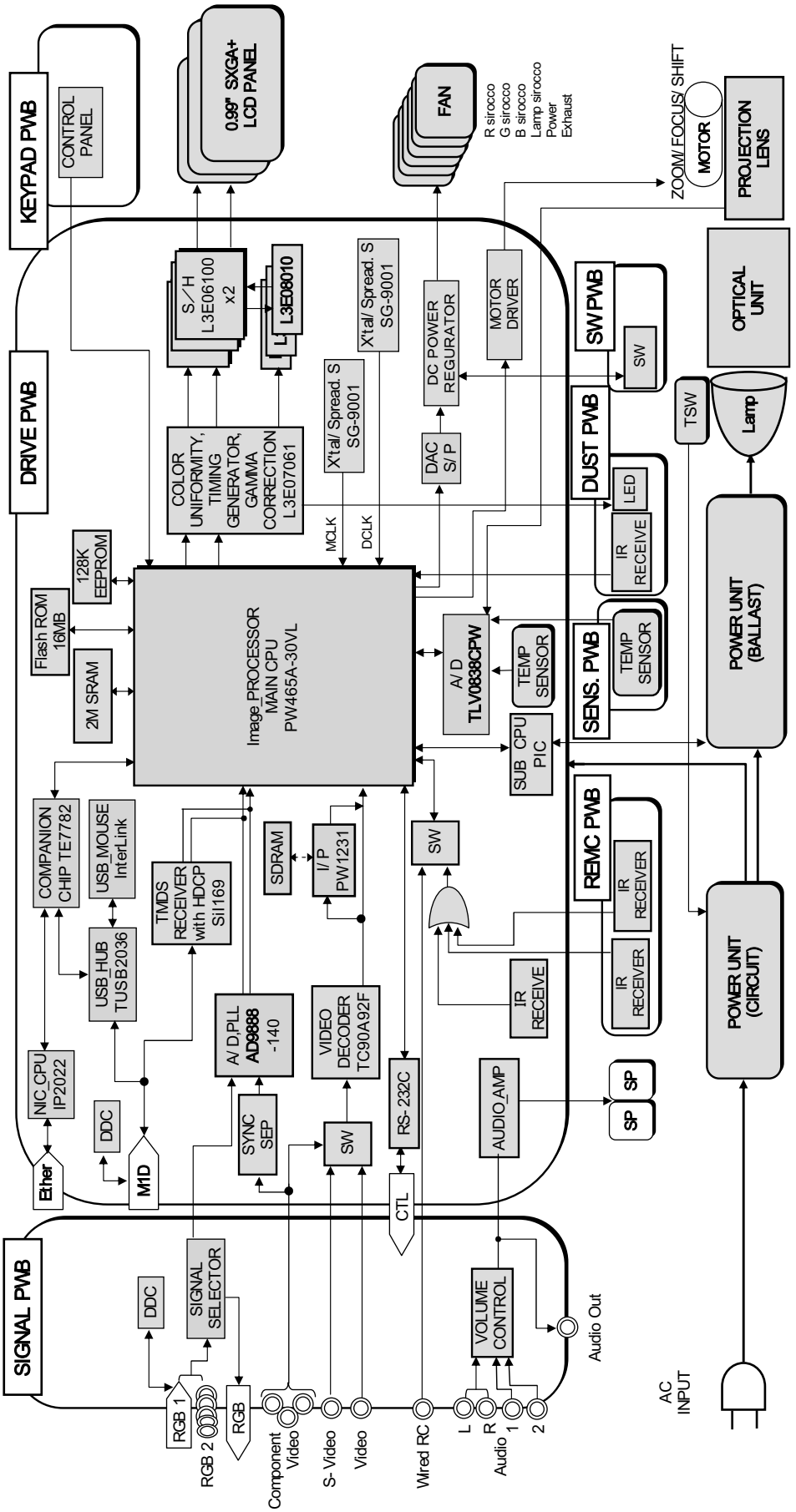
(This table is continued to the following page.)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
PinP Size	Set	Off	BE EF	03	06 00	FE 22	01 00	00 23	00 00
		Large	BE EF	03	06 00	6E 23	01 00	00 23	01 00
		Small	BE EF	03	06 00	9E 23	01 00	00 23	02 00
	Get		BE EF	03	06 00	CD 22	02 00	00 23	00 00
PinP Position	Set	Upper Left	BE EF	03	06 00	02 23	01 00	01 23	00 00
		Upper Right	BE EF	03	06 00	92 22	01 00	01 23	01 00
		Bottom Left	BE EF	03	06 00	62 22	01 00	01 23	02 00
		Bottom Right	BE EF	03	06 00	F2 23	01 00	01 23	03 00
	Get		BE EF	03	06 00	31 23	02 00	01 23	00 00
PinP Audio Ch	Set	RGB	BE EF	03	06 00	BA 22	01 00	03 23	00 00
		Video	BE EF	03	06 00	2A 23	01 00	03 23	01 00
	Get		BE EF	03	06 00	89 22	02 00	03 23	00 00
PinP Input	Set	Video	BE EF	03	06 00	D6 22	01 00	02 23	01 00
		S-Video	BE EF	03	06 00	26 22	01 00	02 23	02 00
	Get		BE EF	03	06 00	75 23	02 00	02 23	00 00
Myscreen Lock	Set	Off	BE EF	03	06 00	3B EF	01 00	C0 30	00 00
		On	BE EF	03	06 00	AB EE	01 00	C0 30	01 00
	Get		BE EF	03	06 00	08 EF	02 00	C0 30	00 00
IR Remote Front	Set	Off	BE EF	03	06 00	FF 32	01 00	00 26	00 00
		On	BE EF	03	06 00	6F 33	01 00	00 26	01 00
	Get		BE EF	03	06 00	CC 32	02 00	00 26	00 00
IR Remote Rear	Set	Off	BE EF	03	06 00	03 33	01 00	01 26	00 00
		On	BE EF	03	06 00	93 32	01 00	01 26	01 00
	Get		BE EF	03	06 00	30 33	02 00	01 26	00 00
IR Remote Top	Set	Off	BE EF	03	06 00	47 33	01 00	02 26	00 00
		On	BE EF	03	06 00	D7 32	01 00	02 26	01 00
	Get		BE EF	03	06 00	74 33	02 00	02 26	00 00

(This table is continued to the following page.)

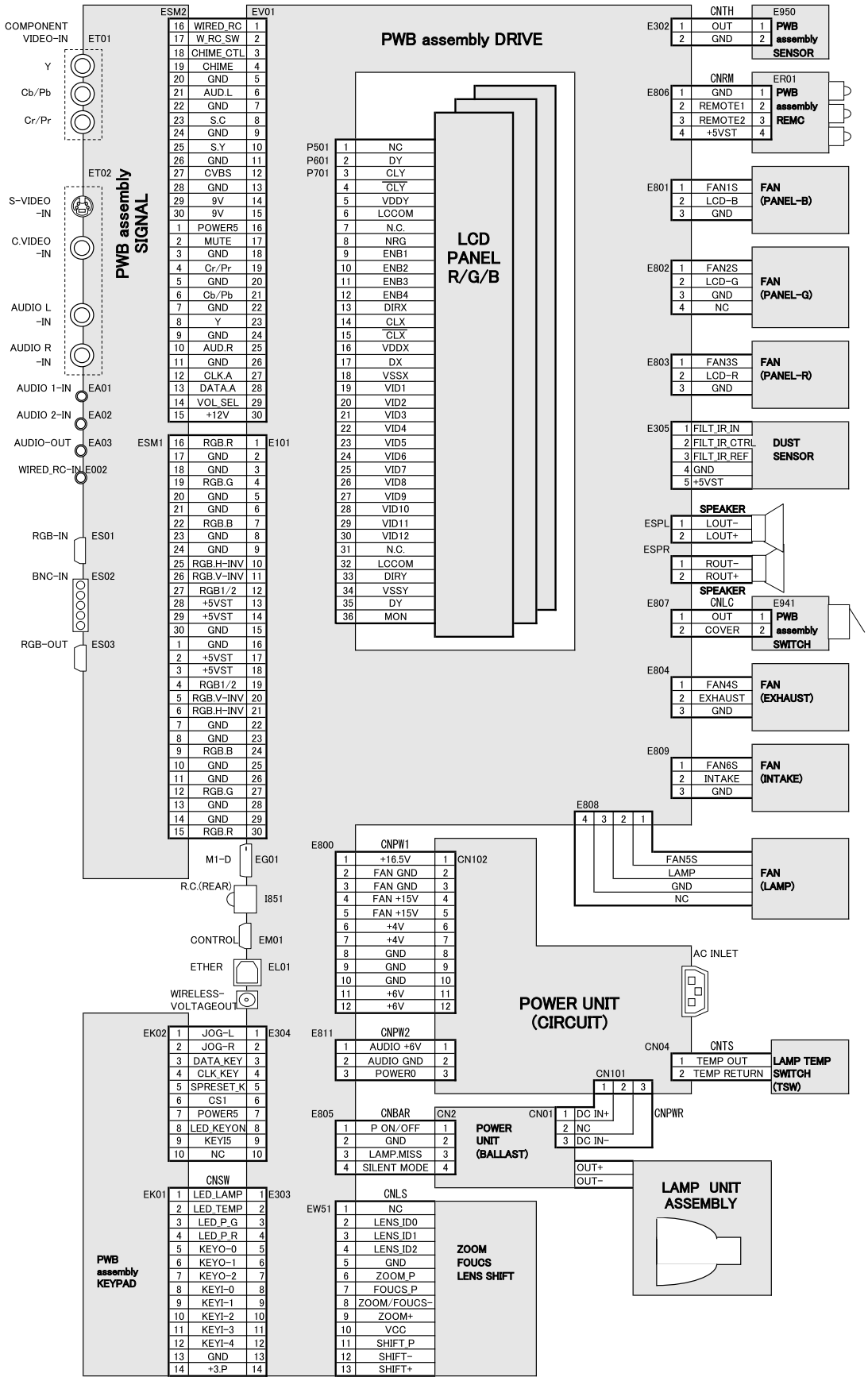
Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Power Up Source	Set	Last Ch	BE EF	03	06 00	9E D9	01 00	18 20	10 00
		M1-D	BE EF	03	06 00	AE D4	01 00	18 20	03 00
		RGB	BE EF	03	06 00	5E D4	01 00	18 20	00 00
		BNC	BE EF	03	06 00	9E D6	01 00	18 20	04 00
		Component	BE EF	03	06 00	0E D7	01 00	18 20	05 00
		S-Video	BE EF	03	06 00	3E D5	01 00	18 20	02 00
		Video	BE EF	03	06 00	CE D5	01 00	18 20	01 00
	Get		BE EF	03	06 00	6D D4	02 00	18 20	00 00
Auto Adjust Enable	Set	DISABLE	BE EF	03	06 00	A2 D5	01 00	19 20	00 00
		ENABLE	BE EF	03	06 00	32 D4	01 00	19 20	01 00
	Get		BE EF	03	06 00	91 D5	02 00	19 20	00 00
Internal Speaker	Set	TURN OFF	BE EF	03	06 00	6E D5	01 00	1C 20	00 00
		TURN ON	BE EF	03	06 00	FE D4	01 00	1C 20	01 00
	Get		BE EF	03	06 00	5D D5	02 00	1C 20	00 00
Lens Lock	Set	TURN OFF	BE EF	03	06 00	FF 97	01 00	10 24	00 00
		TURN ON	BE EF	03	06 00	6F 96	01 00	10 24	01 00
	Get		BE EF	03	06 00	CC 97	02 00	10 24	00 00
Remote ID	Set	All	BE EF	03	06 00	9F 30	01 00	08 26	00 00
		1	BE EF	03	06 00	0F 31	01 00	08 26	01 00
		2	BE EF	03	06 00	FF 31	01 00	08 26	02 00
		3	BE EF	03	06 00	6F 30	01 00	08 26	03 00
	Get		BE EF	03	06 00	AC 30	02 00	08 26	00 00
Lens	Set	AUTO	BE EF	03	06 00	3F D8	01 00	70 25	00 00
		1	BE EF	03	06 00	AF D9	01 00	70 25	01 00
		2	BE EF	03	06 00	5F D9	01 00	70 25	02 00
		3	BE EF	03	06 00	CF D8	01 00	70 25	03 00
		4	BE EF	03	06 00	FF DA	01 00	70 25	04 00
		5	BE EF	03	06 00	6F DB	01 00	70 25	05 00
	Get		BE EF	03	06 00	0C D8	02 00	70 25	00 00

11. Block diagram



Block diagram

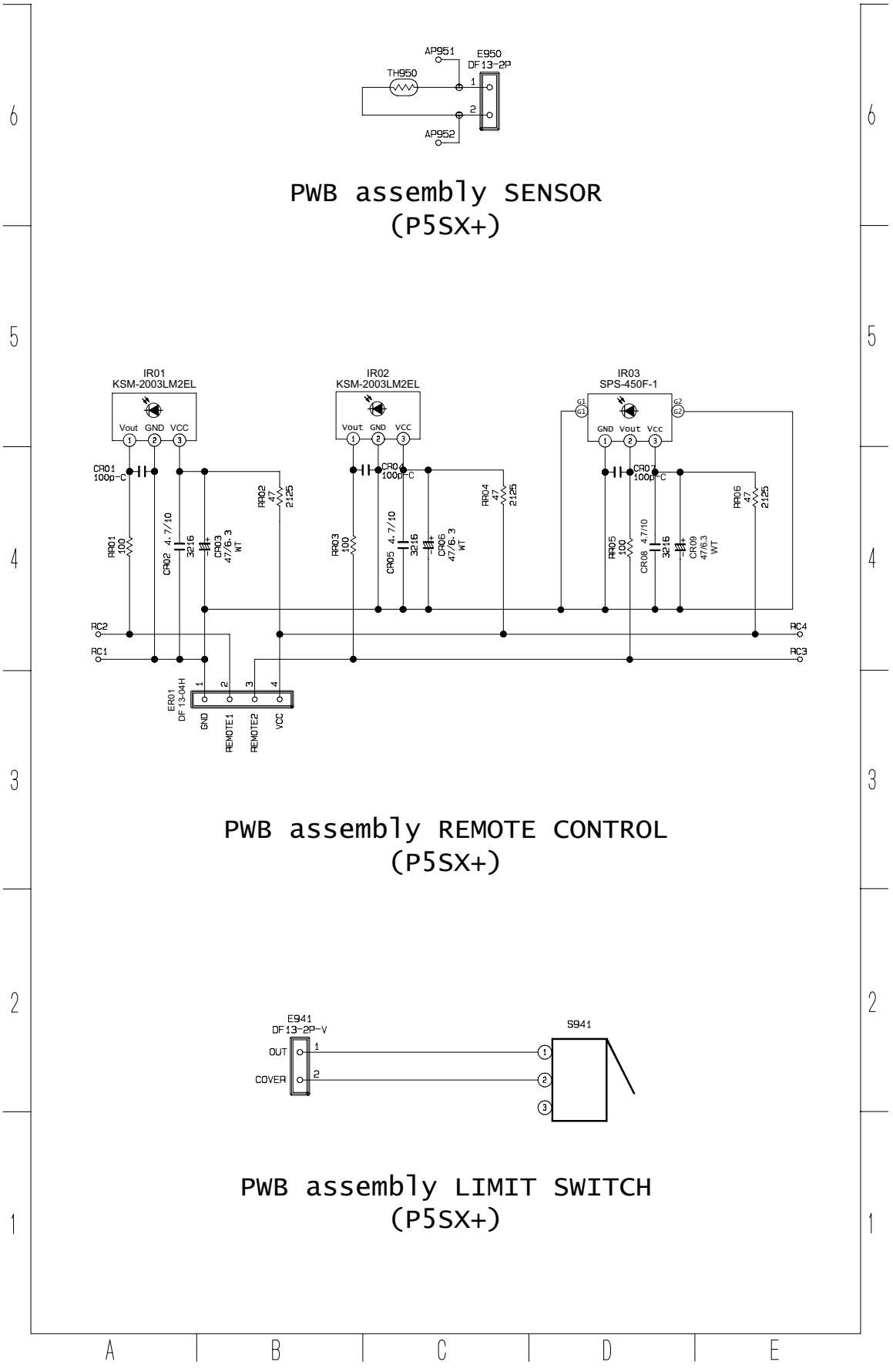
12. Connector connection diagram



Connector connection diagram

13. Basic circuit diagram

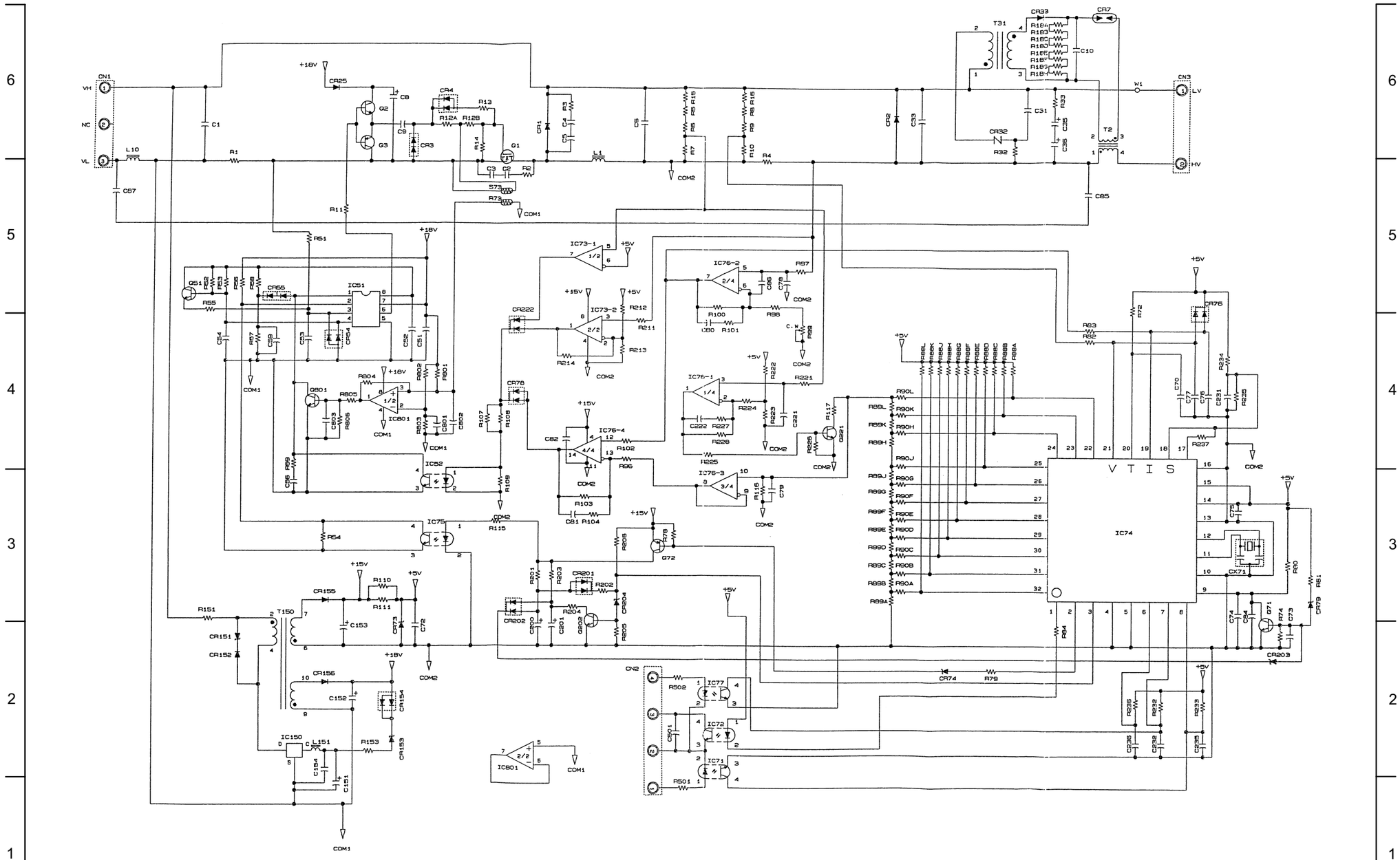
Parts with hatching are not mounted.



PWB assembly SENSOR
(P5SX+)

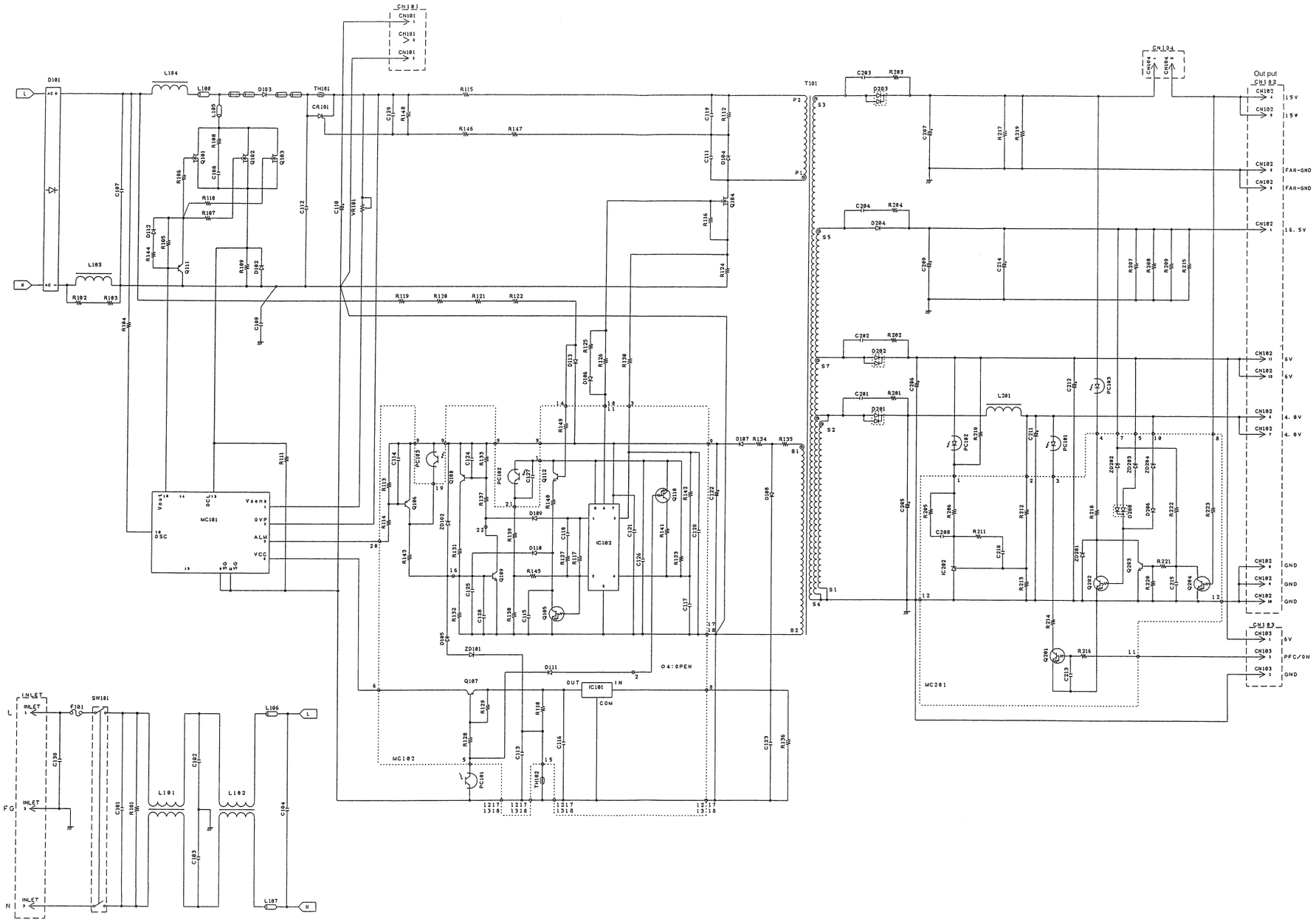
PWB assembly REMOTE CONTROL
(P5SX+)

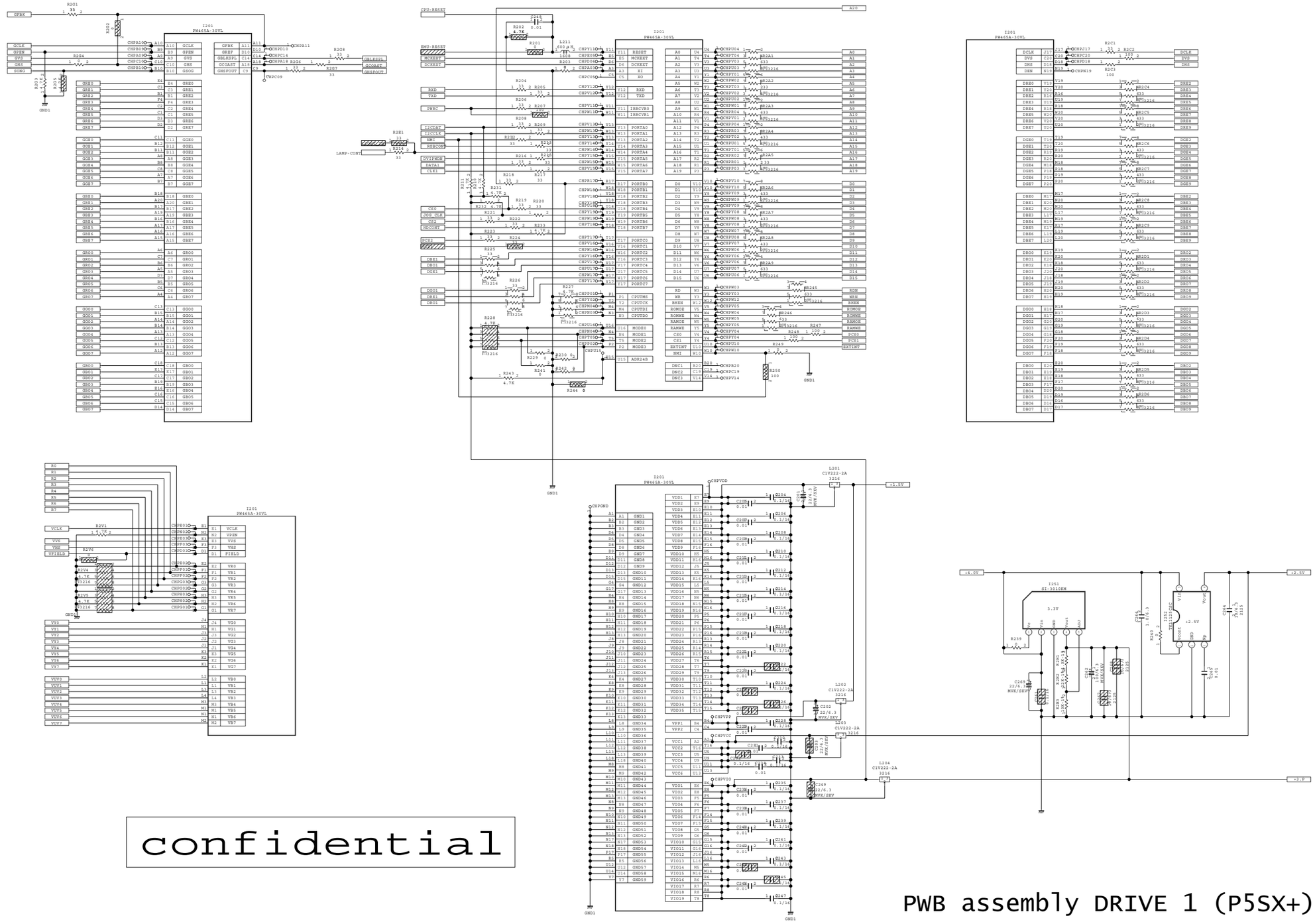
PWB assembly LIMIT SWITCH
(P5SX+)

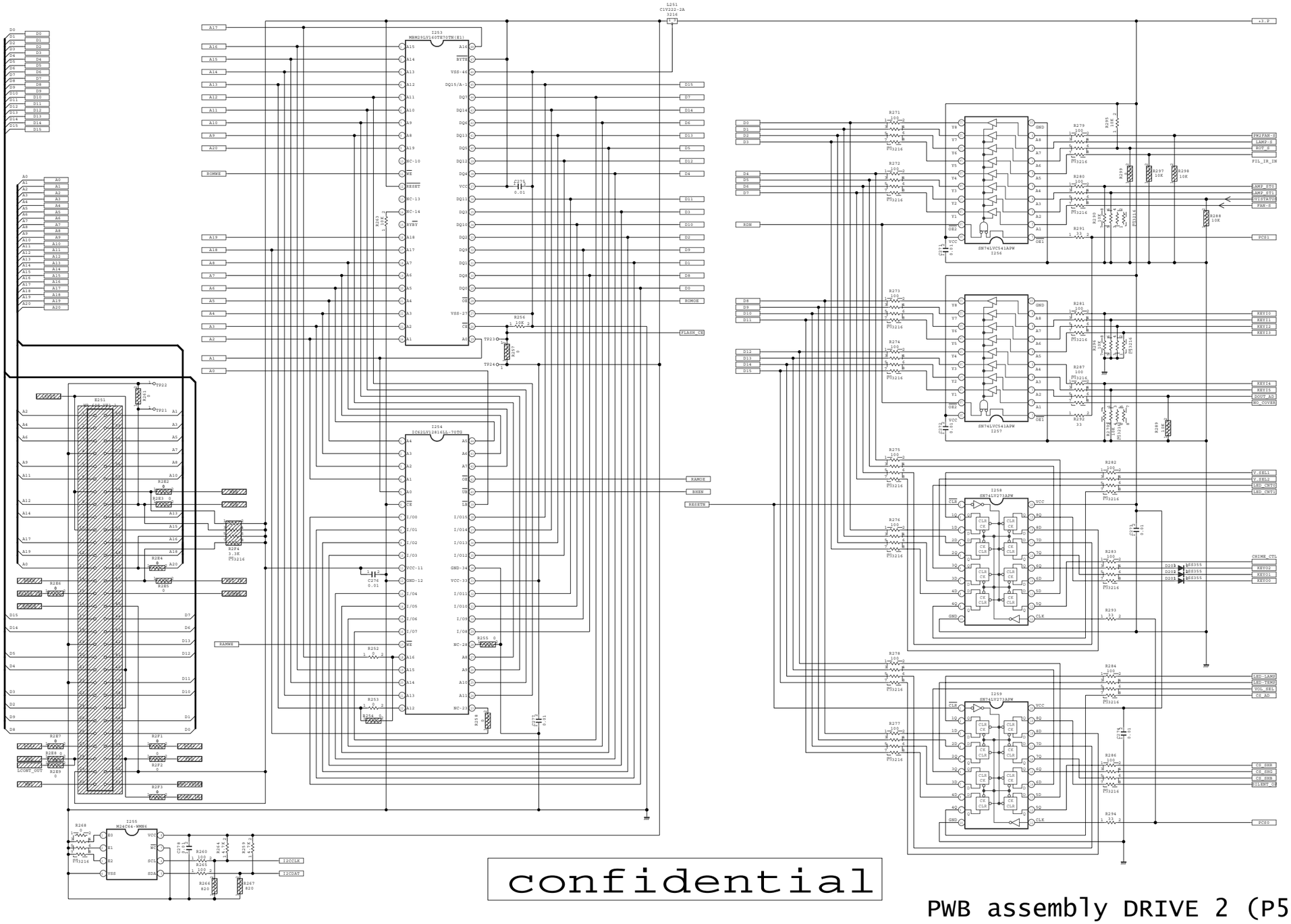


⚠ Warning
For handling of the circuit diagram, refer to the warning on the cover.

POWER UNIT (BALLAST) (P5SX+)

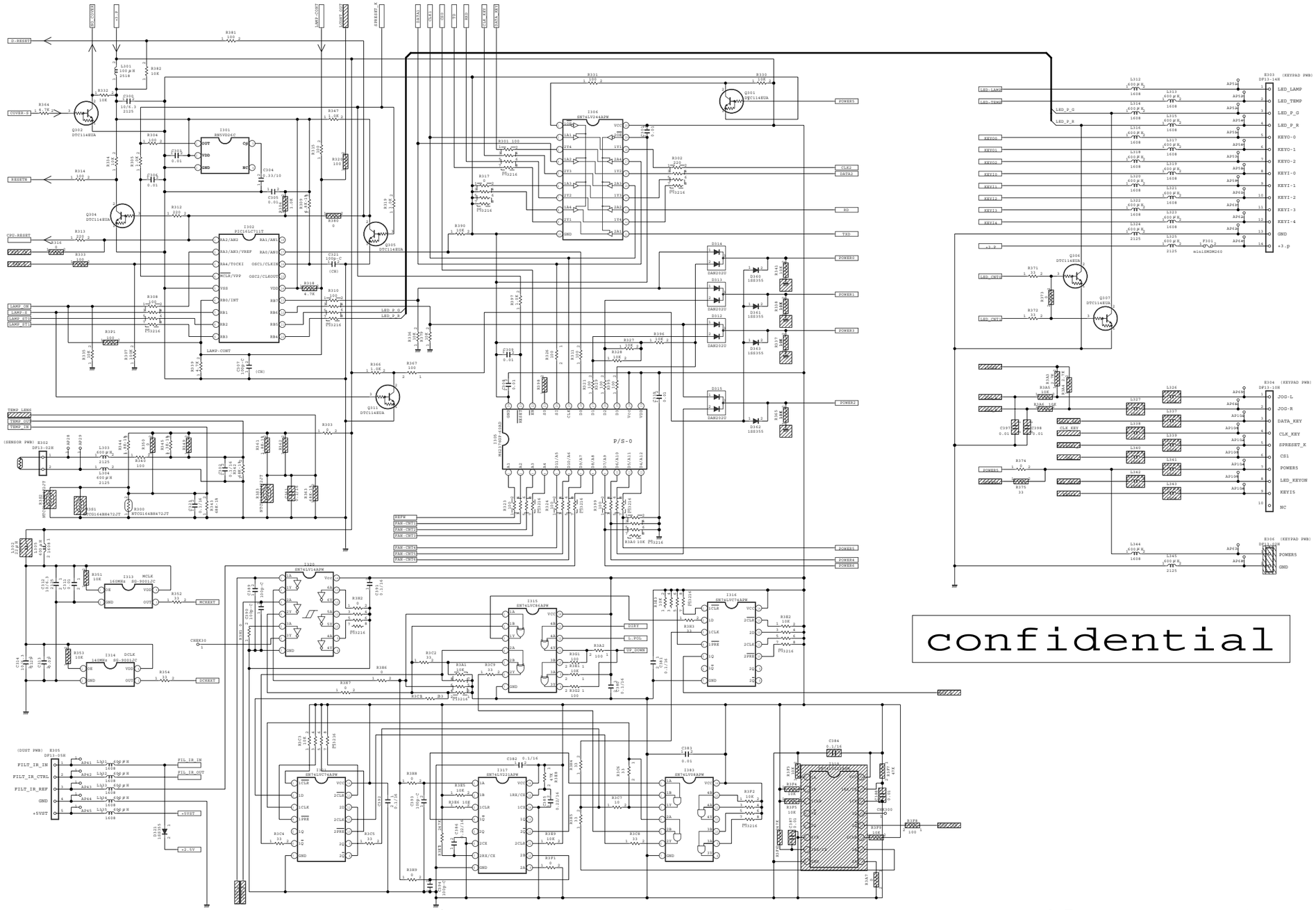

CNJ01
CN101
CN101
CN101
CNJ04
CN104
CN104
Out put
CNJ02
CN102 15V
CN102 15V
CN102 FAN-GND
CN102 FAN-GND
CN102 16.5V
CN102 6V
CN102 6V
CN102 4.0V
CN102 4.0V
CN102 GND
CN102 GND
CN102 GND
CNJ03
CN103 6V
CN103 PFC/ON
CN103 GND
T101
P2
P1
S3
S5
S7
S2
S1
S4
B1
B2
D101
L104
L108
D103
TH101
CR101
L105
L103
R102
R103
R104
C107
C112
C138
VR101
R115
R146
R147
C129
R148
C119
R112
C111
D104
R116
Q104
R124
R119
R120
R121
R122
C109
D113
D106
R125
R126
R138
R149
D107
R134
R135
D108
R111
MC101
Vout
GCL
Vsens
OSC
OVP
ALM
VCC
GND
IC102
IC101
IN
OUT
COM
MC102
MC201
IC202
D111
04:OPEN
ZD101
Q107
R129
R128
R118
C113
C116
C123
R136
PC104
TH102
C114
PC103
C124
R133
PC102
C122
R142
Q110
C121
R141
C120
R140
D109
R139
D110
R127
R117
R145
R143
R131
R132
C125
C128
R138
C115
Q105
C126
R123
C117
D105
ZD102
Q108
Q109
R114
R113
Q106
C127
Q112
C118
R137
R144
D112
R105
Q111
R106
Q101
Q102
Q103
R108
R107
R110
R109
D114
C108
R186
R189
C106
R188
C105
R187
C104
C103
C102
C101
R101
L101
L102
L106
L107
F101
SW101
INLET
C139
C203
R203
D203
C207
R217
R219
C204
R204
D204
C209
C214
R207
R208
R209
R215
C202
R202
D202
C201
R201
D201
L201
C206
C212
PC103
PC102
PC101
R310
C211
ZD282
ZD283
ZD284
R305
R306
C208
R211
C210
R312
R318
D305
D306
R322
R323
ZD281
Q203
R221
Q202
R220
C215
Q204
R214
R216
Q201
C213
C202
R212
R213
C205
R215
R219
R222
1217
1318
Warning
For handling of the circuit diagram, refer to the warning on the cover.
POWER UNIT (CIRCUIT) (P5SX+)

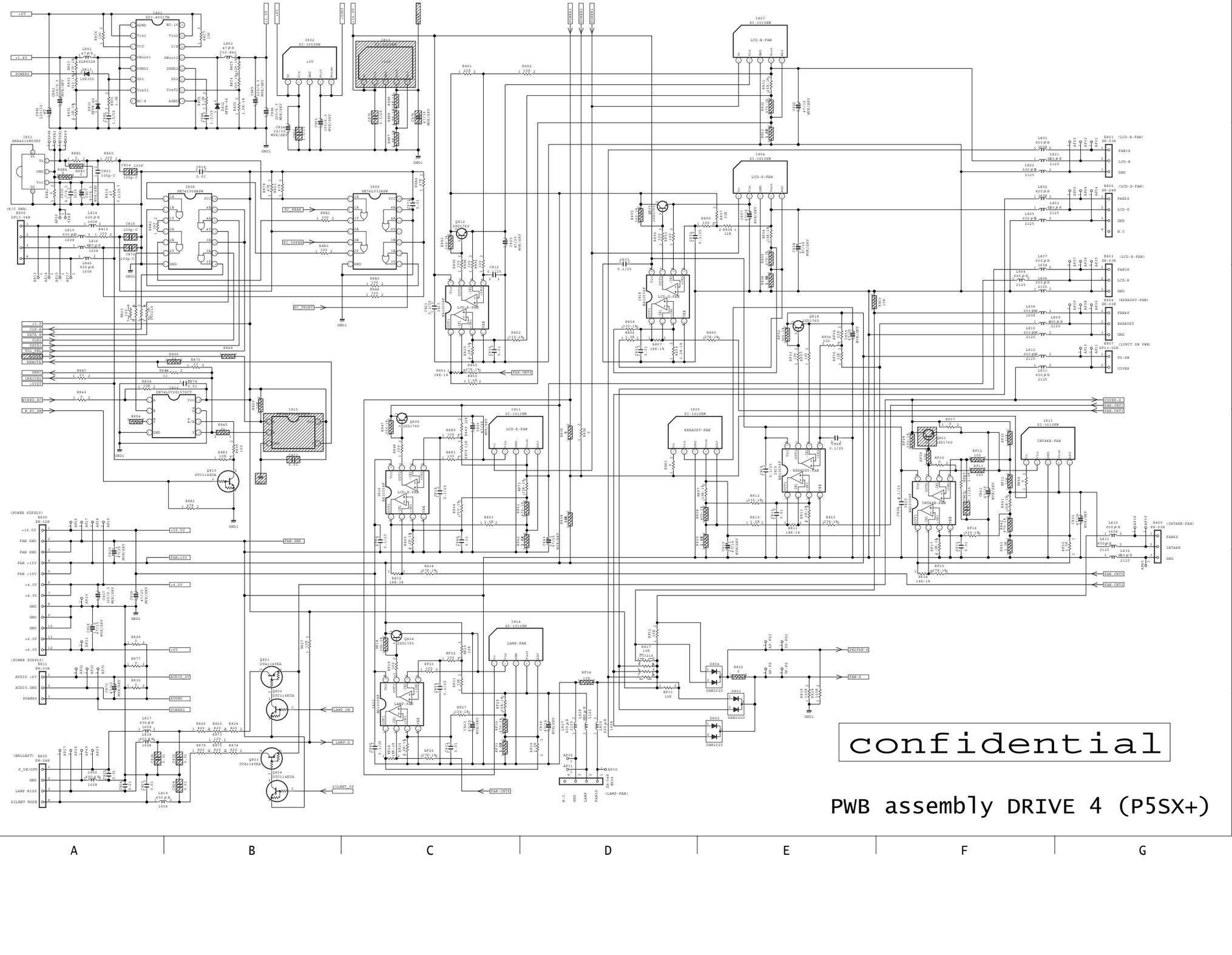

I201
PW465A-30VL
R201
R202
R203
R204
R205
R206
R207
R208
R209
R210
R211
R212
R213
R214
R215
R216
R217
R218
R219
R220
R221
R222
R223
R224
R225
R226
R227
R228
R229
R230
R231
R232
R233
R234
R235
R236
R237
R238
R239
R240
R241
R242
R243
R244
R245
R246
R247
R248
R249
R250
C201
C202
C203
C204
C205
C206
C207
C208
C209
C210
C211
C212
C213
C214
C215
C216
C217
C218
C219
C220
C221
C222
C223
C224
C225
C226
C227
C228
C229
C230
C231
C232
C233
C234
C235
C236
C237
C238
C239
C240
C241
C242
C243
C244
C245
C246
C247
C248
C249
L201
L202
L203
L204
L211
R2C1
R2C2
R2C3
R2C4
R2C5
R2C6
R2C7
R2C8
R2C9
R2D1
R2D2
R2D3
R2D4
R2D5
R2D6
R2D7
R2D8
R2D9
R2A1
R2A2
R2A3
R2A4
R2A5
R2A6
R2A7
R2A8
R2A9
R2V1
R2V2
R2V3
R2V4
R2V5
R2V6
R2V7
R2V8
R2V9
I251
SI-3010KM
PE115SEC
confidential
PWB assembly DRIVE 1 (P5SX+)

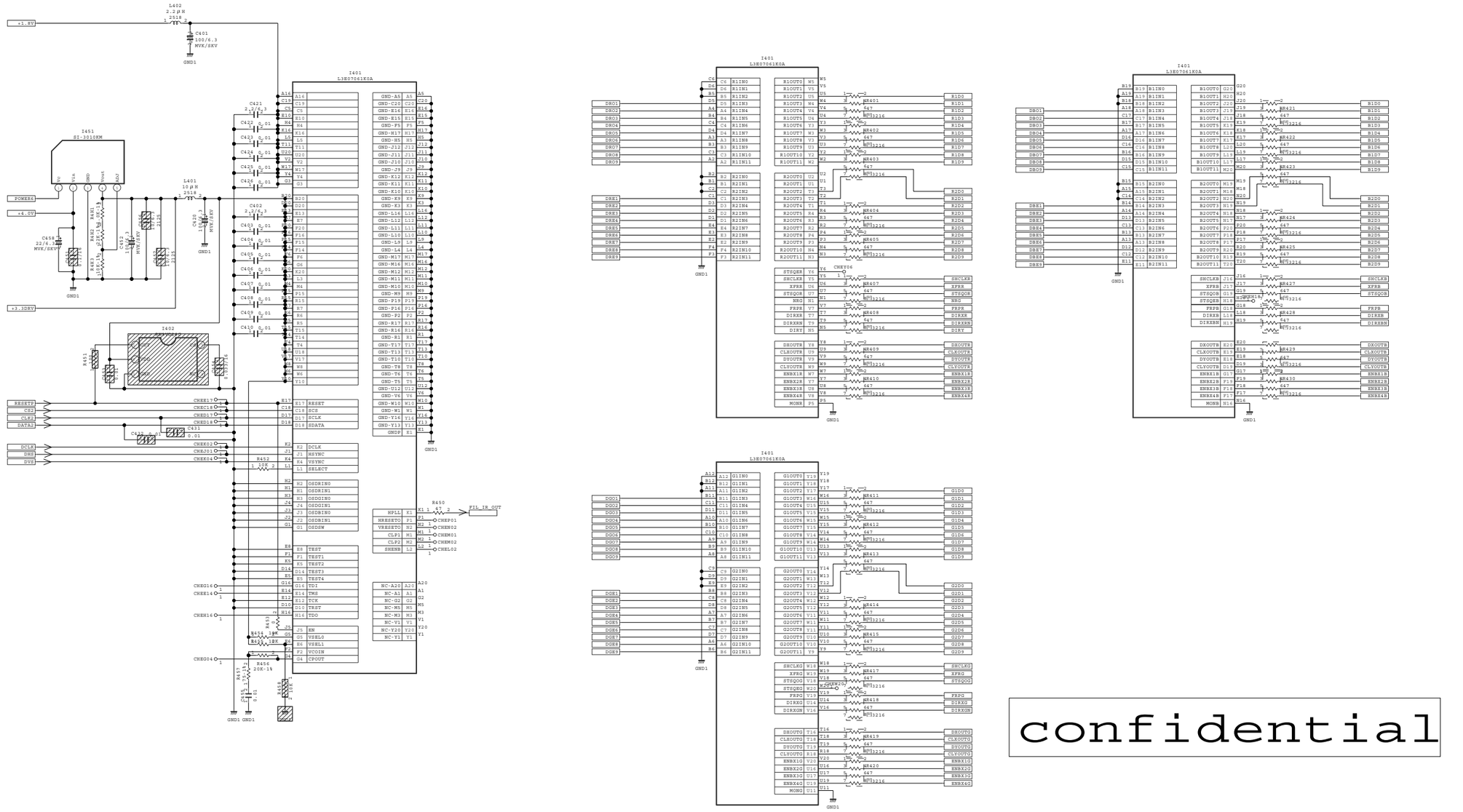


confidential

PWB assembly DRIVE 2 (P5SX+)

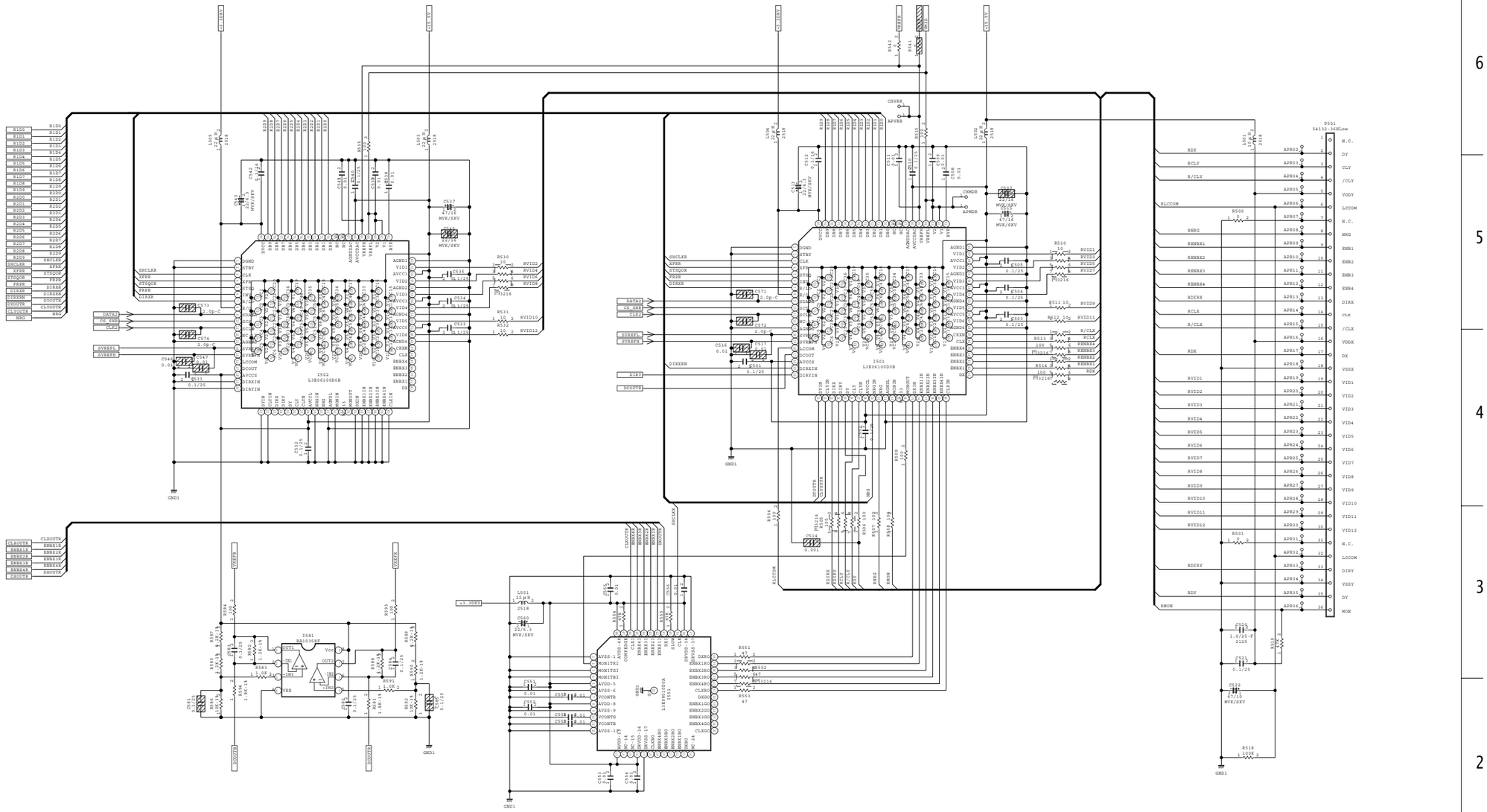

D_RESET
COVER_S
RESETN
CPU_RESET
LAMP_ON
LAMP_S
LAMP_ST2
LAMP_ST1
TEMP_LENS
TEMP_CT
TEMP_IN
(SENSOR PWB) P302
DF13-02N
(DUST PWB) P305
DF13-05N
FILT_IR_IN
FILT_IR_CTRL
FILT_IR_REF
GND
+5VDT
FILT_IR_IN
FILT_IR_OUT
+5VDT
+2.5V
MCKEXT
DCKEXT
CHSEX10
LAMP-CONT
LED_P_G
LED_P_R
CLK2
DATA2
RD
TXD
POWER1
POWER2
POWER3
POWER4
POWER5
REFW
FAN-CNT1
FAN-CNT2
FAN-CNT3
FAN-CNT4
FAN-CNT5
FAN-CNT6
U_DIR
L_POL
UP_DOWN
P/S-0
(KEYPAD PWB) P303 DF13-14R
LED_LAMP
LED_TEMP
LED_P_G
LED_P_R
KEY0-0
KEY0-1
KEY0-2
KEY1-0
KEY1-1
KEY1-2
KEY1-3
KEY1-4
GND
+3.P
(KEYPAD PWB) P304 DF13-10R
JOG-L
JOG-R
DATA_KEY
CLK_KEY
SPRESET_K
CS1
POWER5
LED_KEYON
KEY15
NC
(KEYPAD PWB) P306 DF13-03R
POWER5
GND
mini6MDM260
confidential
PWB assembly DRIVE 3 (P5SX+)


confidential
PWB assembly DRIVE 4 (P5SX+)



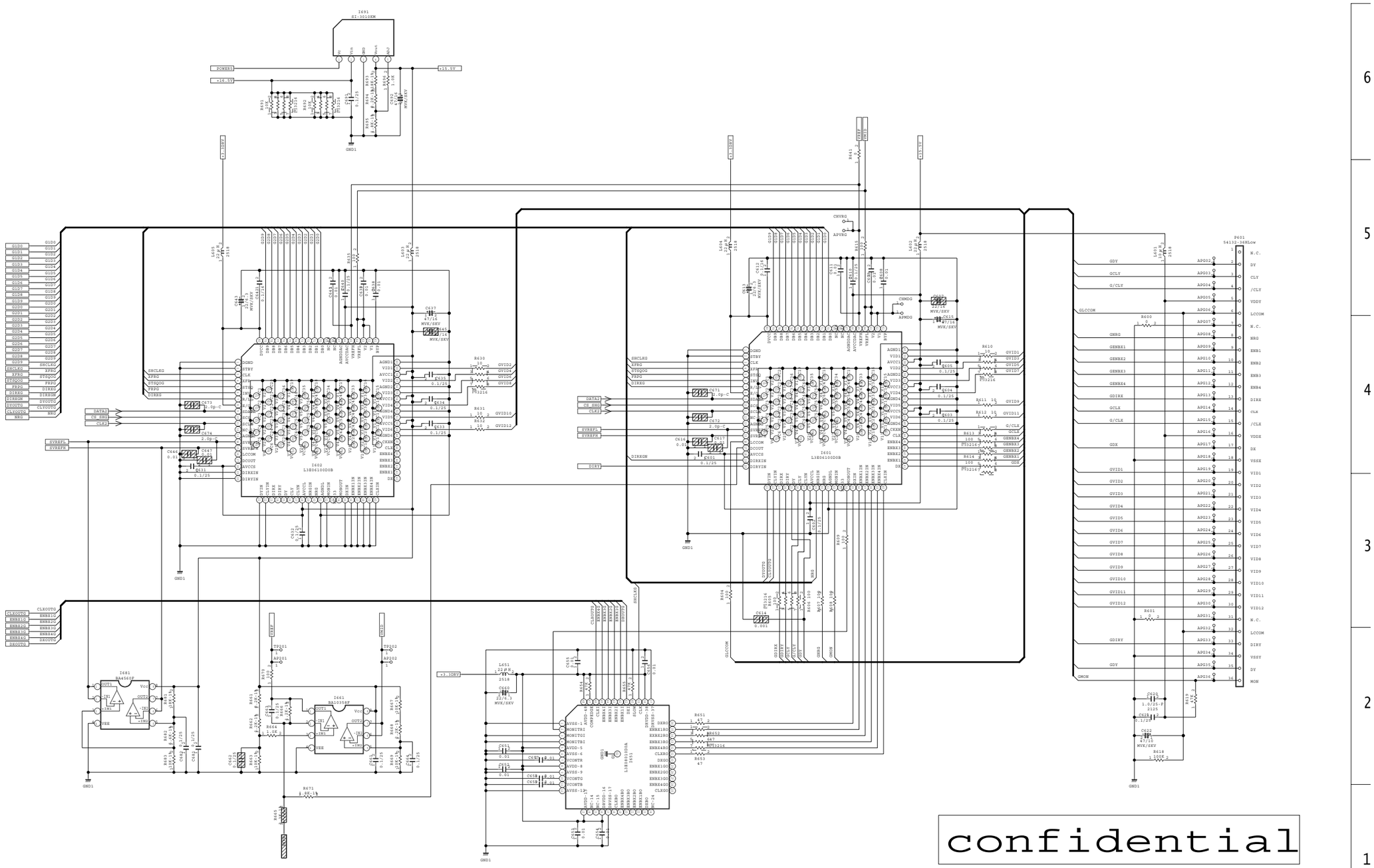
confidential

PWB assembly DRIVE 5 (P5SX+)



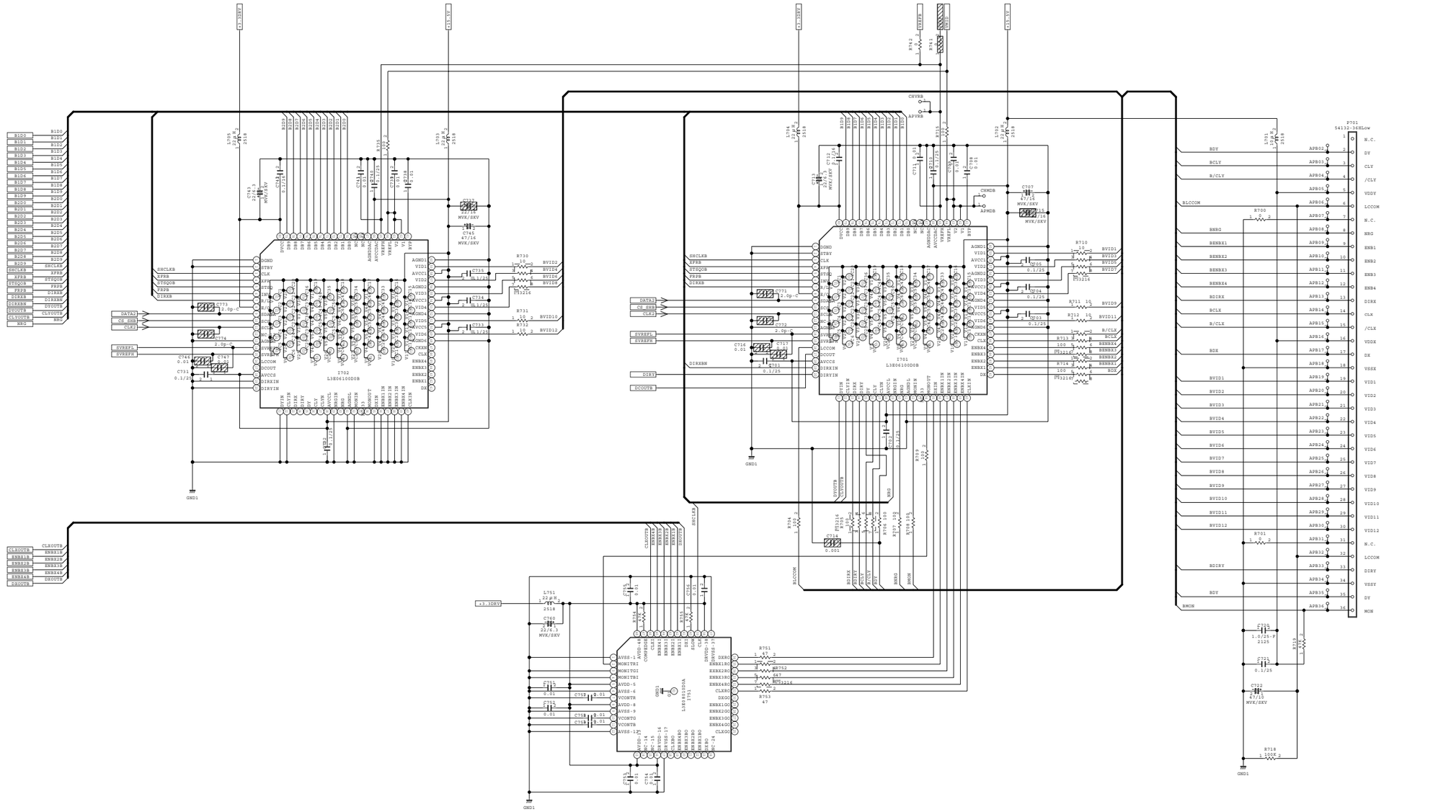
confidential

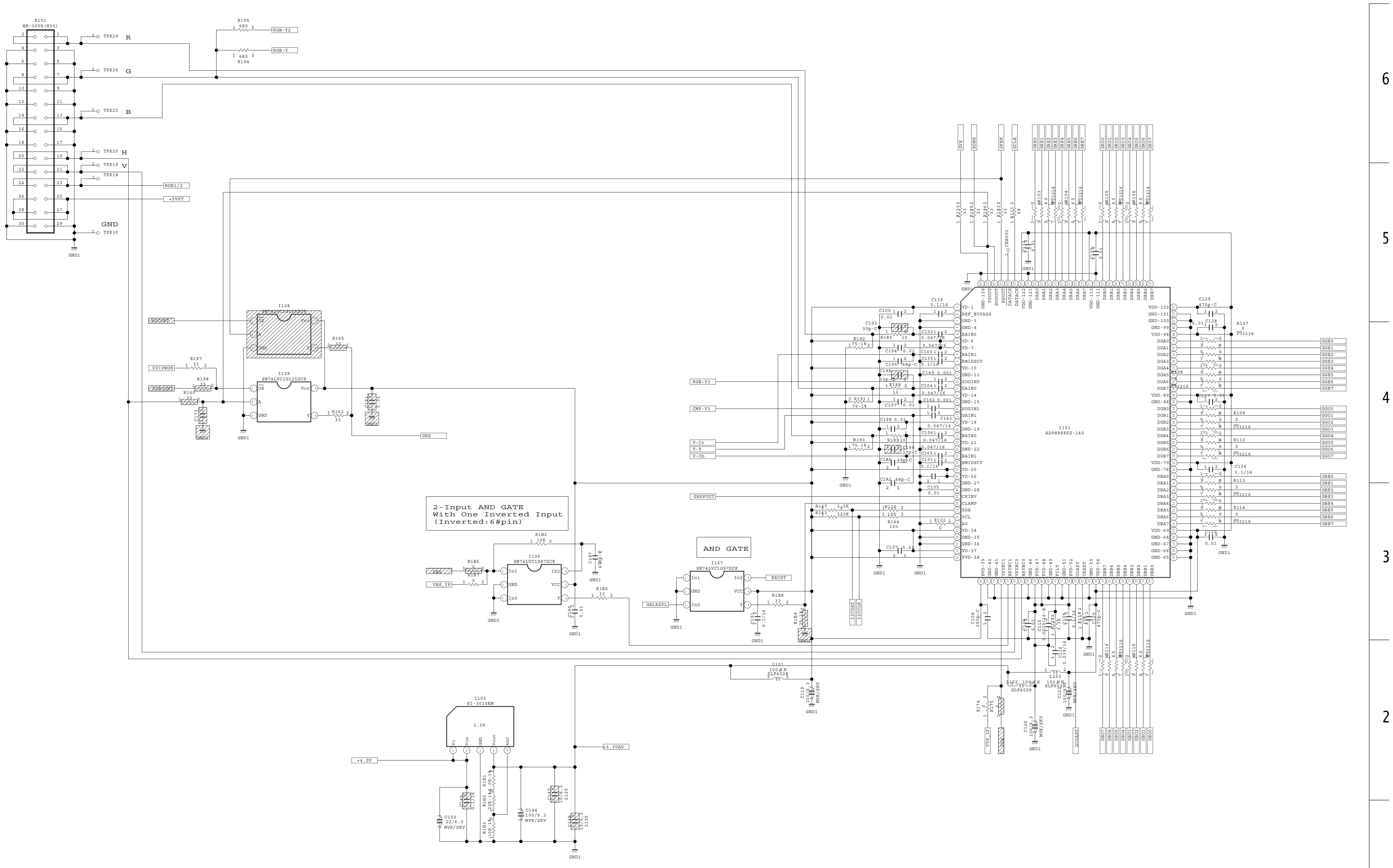
PWB assembly DRIVE 6 (P5SX+)



confidential

PWB assembly DRIVE 7 (P5SX+)


P701
54132-36HLow
APB02
APB03
APB04
APB05
APB06
APB07
APB08
APB09
APB10
APB11
APB12
APB13
APB14
APB15
APB16
APB17
APB18
APB19
APB20
APB21
APB22
APB23
APB24
APB25
APB26
APB27
APB28
APB29
APB30
APB31
APB32
APB33
APB34
APB35
APB36
BDY
BCLY
B/CLY
BLCCOM
BNBQ
BENBX1
BENBX2
BENBX3
BENBX4
BDIRX
BCLX
B/CLX
BDX
BVID1
BVID2
BVID3
BVID4
BVID5
BVID6
BVID7
BVID8
BVID9
BVID10
BVID11
BVID12
BDIRY
BDY
BMON
N.C.
DY
CLY
/CLY
VDDY
LCCOM
N.C.
NBQ
ENB1
ENB2
ENB3
ENB4
DIRX
CLX
/CLX
VDDX
DX
VSSX
VID1
VID2
VID3
VID4
VID5
VID6
VID7
VID8
VID9
VID10
VID11
VID12
N.C.
LCCOM
VSSY
DIRY
DY
MON
L702
L703
L704
L705
L706
L707
L708
L709
L710
L711
L712
L713
L714
L715
L716
L717
L718
L719
L720
L721
L722
L723
L724
L725
L726
L727
L728
L729
L730
L731
L732
L733
L734
L735
L736
L737
L738
L739
L740
L741



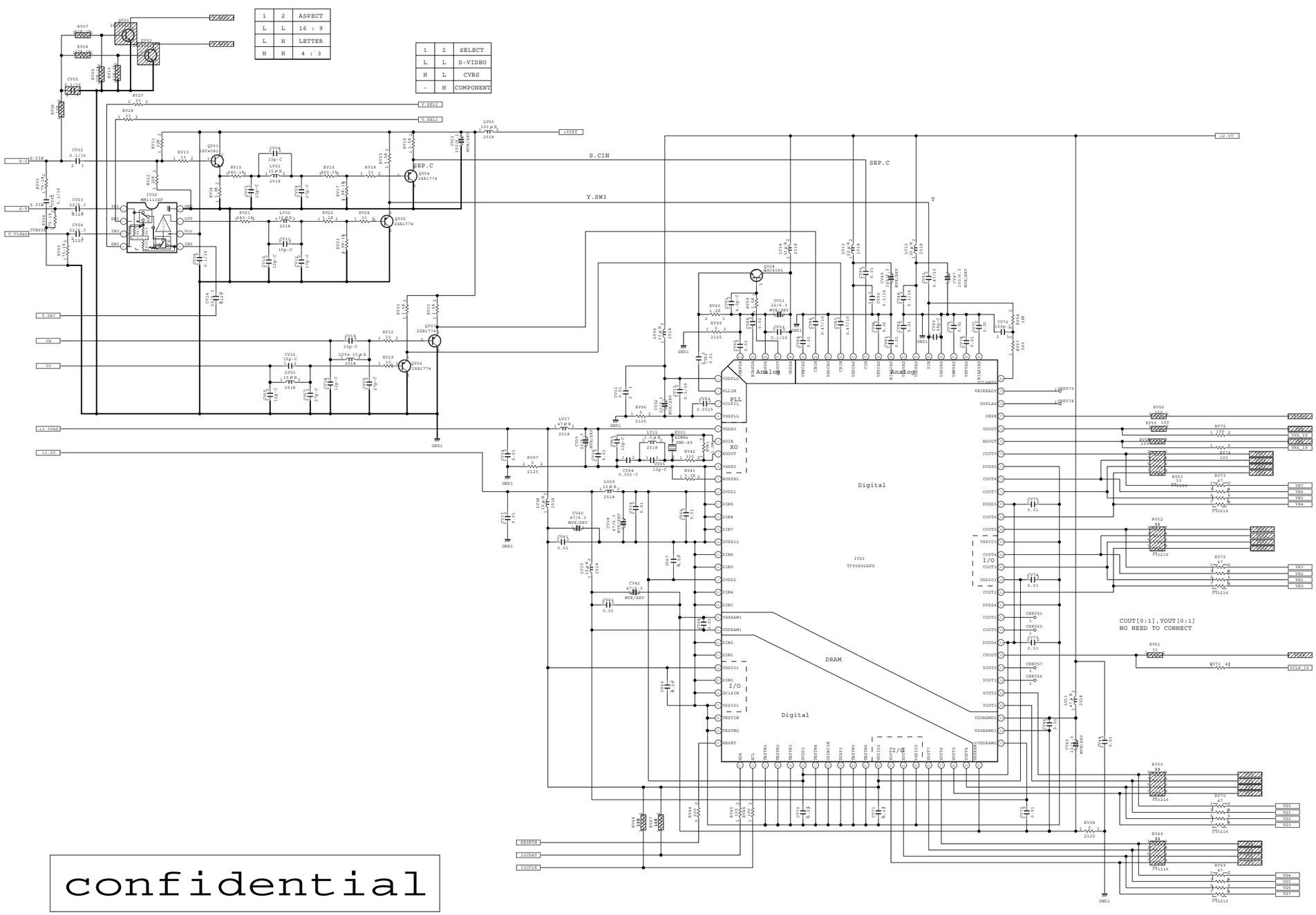
E101
WR-30VS(H30)
TPX29 R
TPX26 G
TPX23 B
TPX20 H
TPX19 V
TPX18
GND
TPX30
RGB1/2
+5VST
R195 680
RGB-Y2
RGB-Y
R194
I108 SN74LVC1G125DCK
HDCONT
DVIPWDN
RGBCONT
I109 SN74LVC1G125DCK
GHS
RGB-Y3
CMP-Y3
V-Cr
V-Y
V-Cb
GHSFOUT
2-Input AND GATE
With One Inverted Input
(Inverted:6#pin)
I106 SN74LVC1G97DCK
VHS
VHS_IP
AND GATE
I107 SN74LVC1G97DCK
EXCST
GBLKSPL
I2CDAT
I2CCLK
I101
AD9888KSZ-140
GVS
SONG
GFBK
GCLK
GRE0 GRE1 GRE2 GRE3 GRE4 GRE5 GRE6 GRE7
GRO0 GRO1 GRO2 GRO3 GRO4 GRO5 GRO6 GRO7
GGE0 GGE1 GGE2 GGE3 GGE4 GGE5 GGE6 GGE7
GGO0 GGO1 GGO2 GGO3 GGO4 GGO5 GGO6 GGO7
GBE0 GBE1 GBE2 GBE3 GBE4 GBE5 GBE6 GBE7
GBO7 GBO6 GBO5 GBO4 GBO3 GBO2 GBO1 GBO0
VVS_IP
VVS
GCOAST
L101 100μH SLF6028
L102 100μH SLF6028
L103 100μH SLF6028
I102
SI-3010KM
3.3V
+4.0V
+3.3VAD
GND1

confidential

PWB assembly DRIVE 9 (P5SX+)

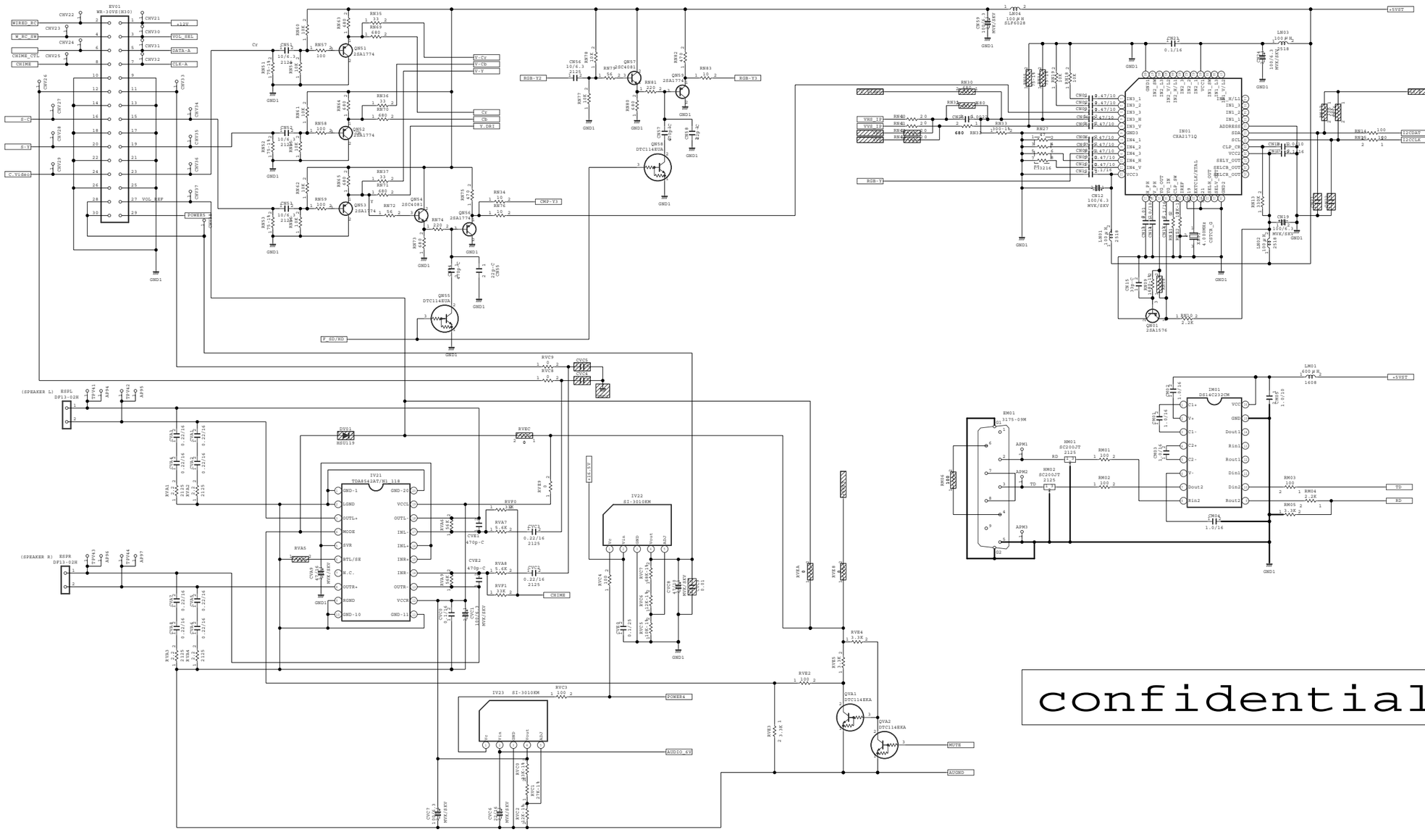
A B C D E F G

6 5 4 3 2 1

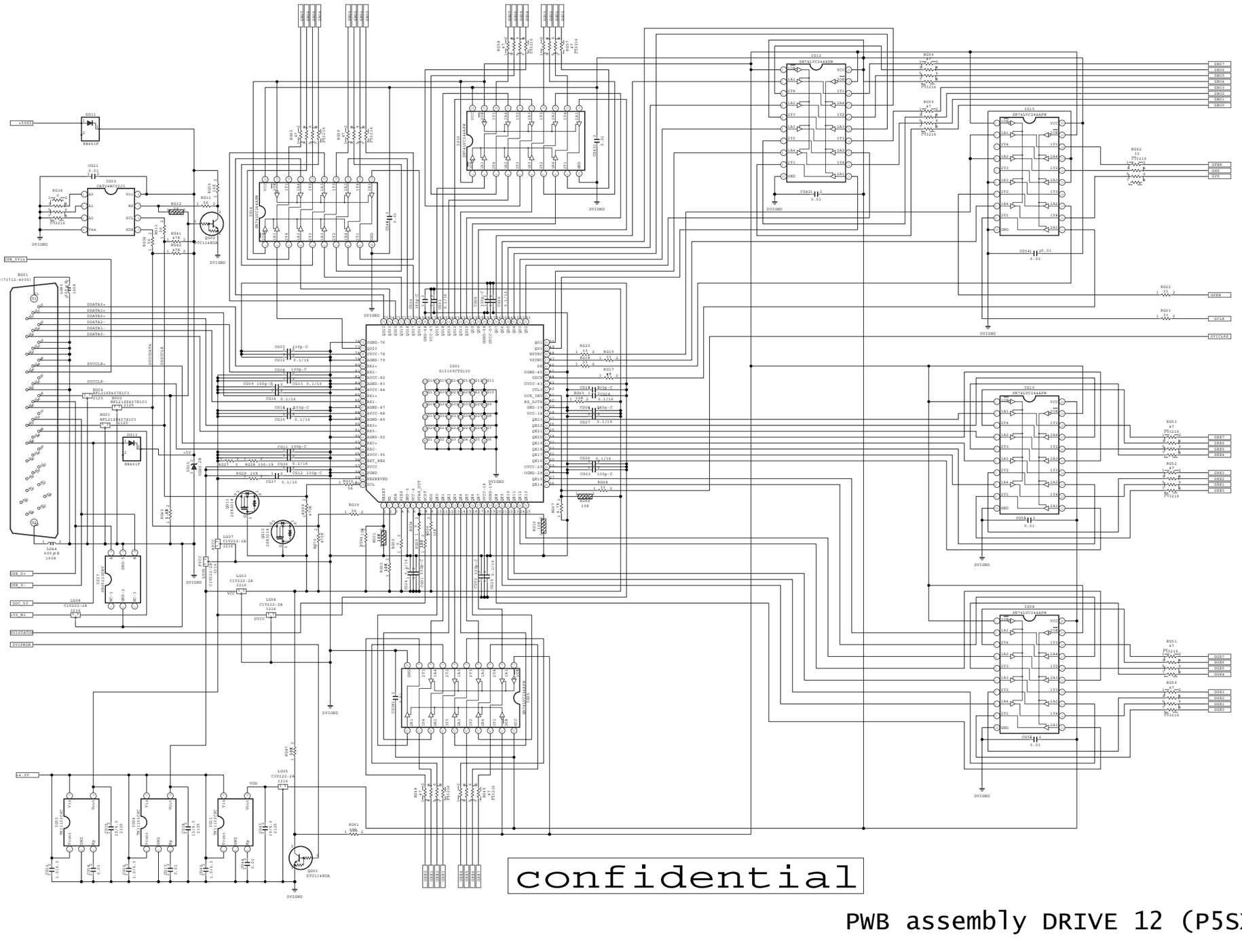


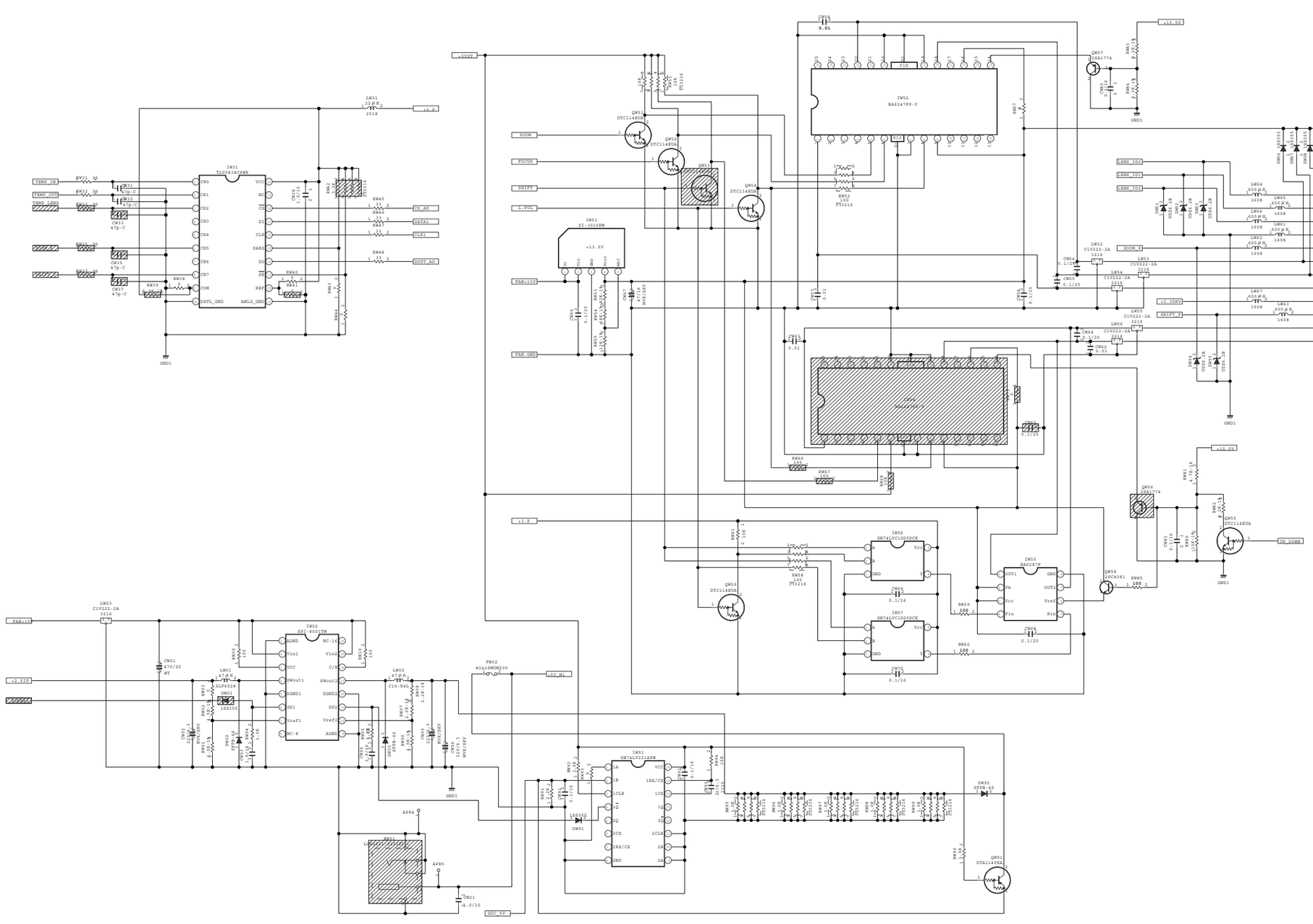
confidential

PWB assembly DRIVE 10 (P5SX+)



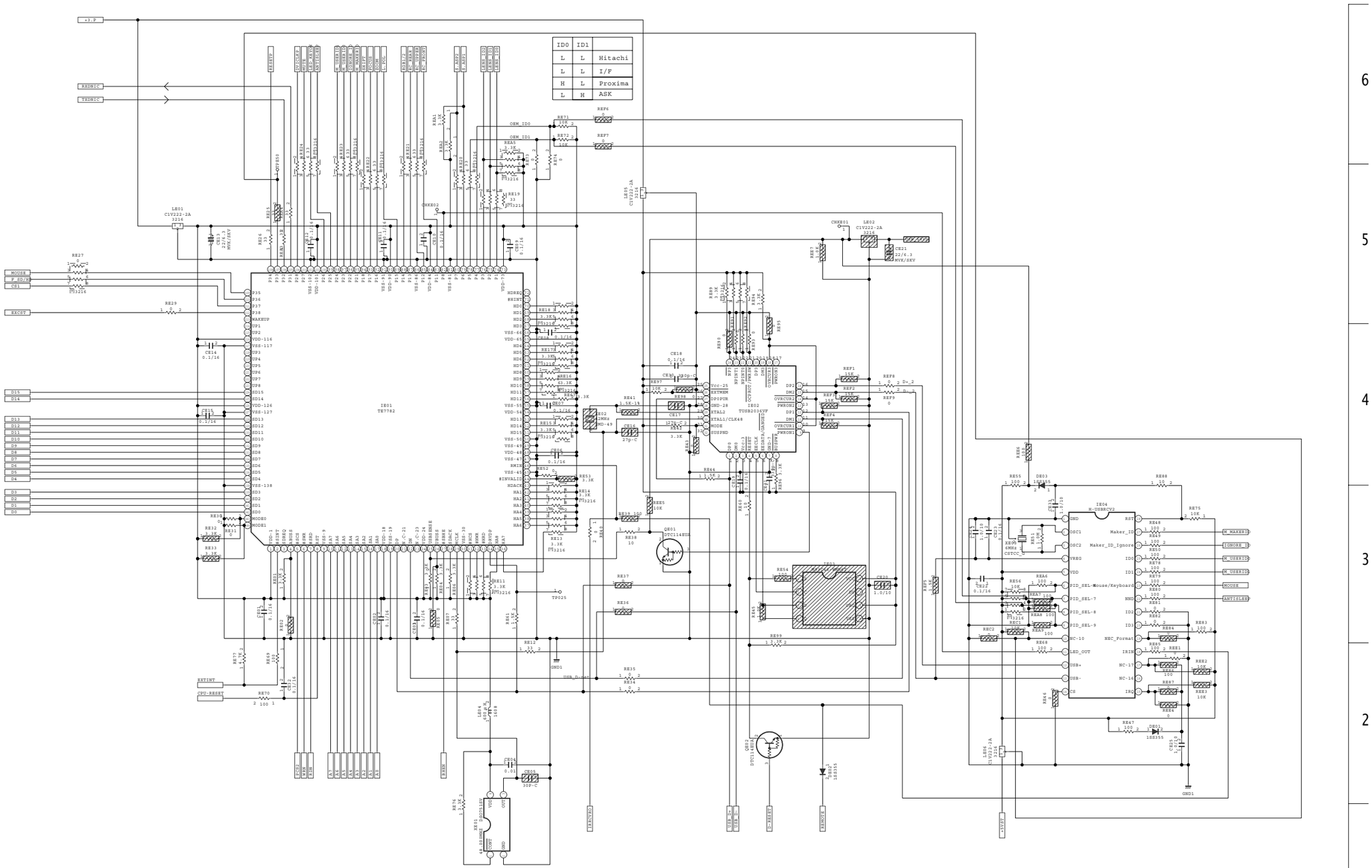
PWB assembly DRIVE 11 (P5SX+)

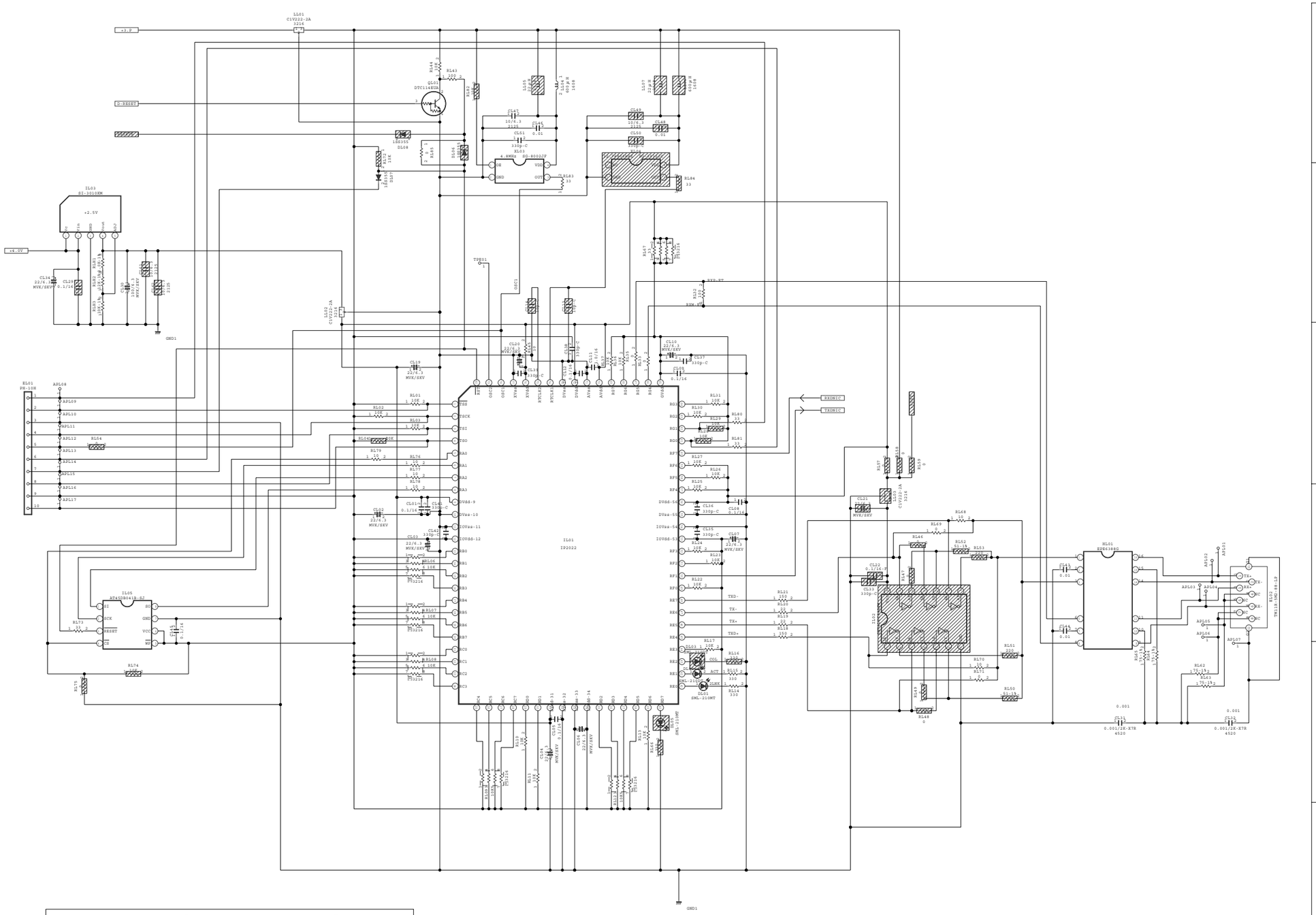

confidential
PWB assembly DRIVE 12 (P5SX+)



confidential

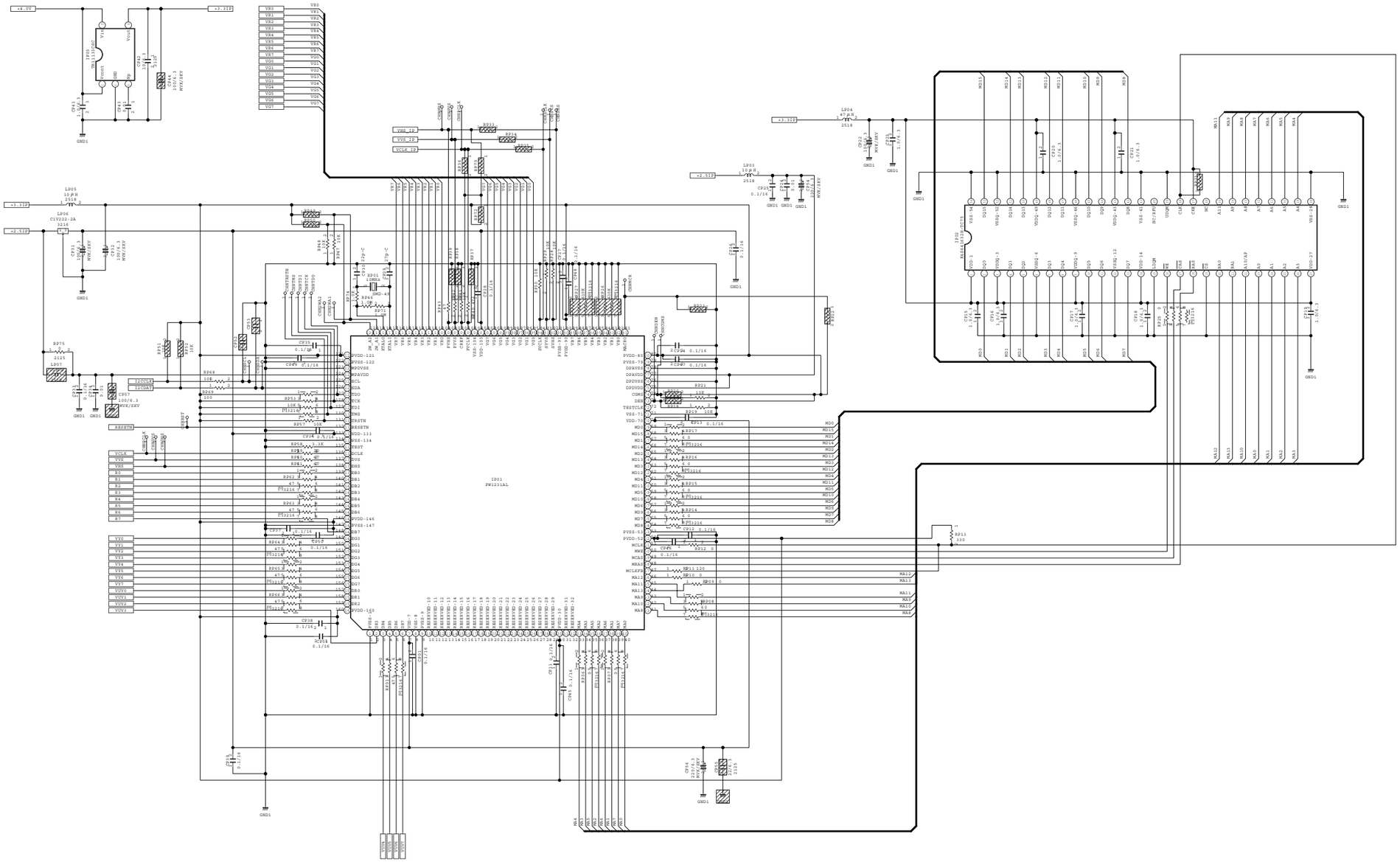
PWB assembly DRIVE 13 (P5SX+)


ID0 ID1
L L Hitachi
L L I/F
H L Proxima
L H ASK
IE01 TE7782
IE02 TUSB2036YF
IE03 M-DEBCV2
Maker_ID
Maker_ID_Ignore
Mouse/Keyboard
NEC_Format
M_MAKER1
IGNORE_1
M_USERID0
M_USERID1
MOUSEK
ANTISLEEP
confidential
PWB assembly DRIVE 14 (P5SX+)



confidential

PWB assembly DRIVE 15 (P5SX+)



confidential

PWB assembly DRIVE 16 (P5SX+)

RGB IN1

RGB IN2

RGB OUT

R1

R2

G2

B1

G1

B2

L:RGB1/H:RGB2

R1/R2

RGB.H-INV

RGB.V-INV

H

V

R

G

B

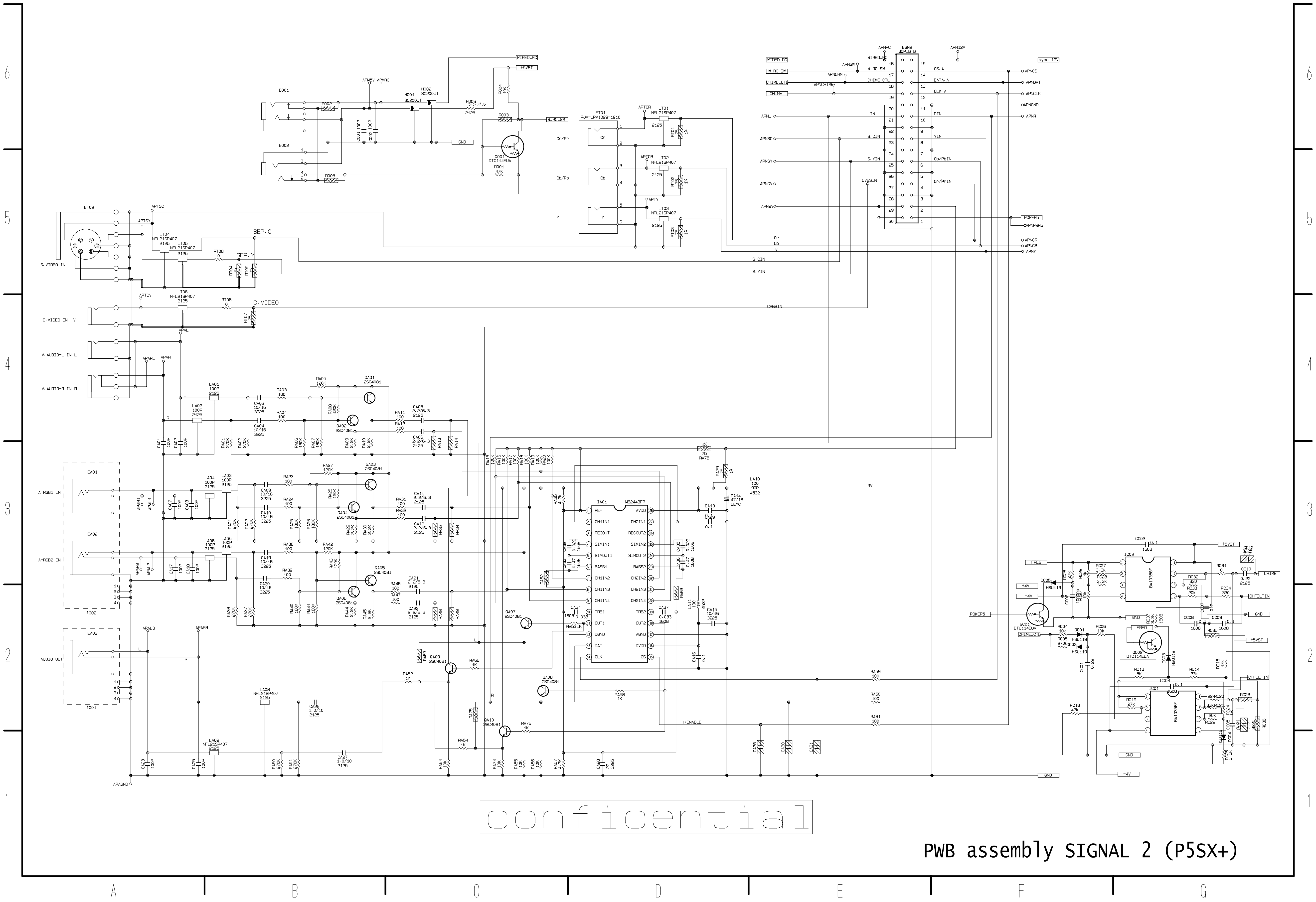
+4V

-4V

+5VST

confidential

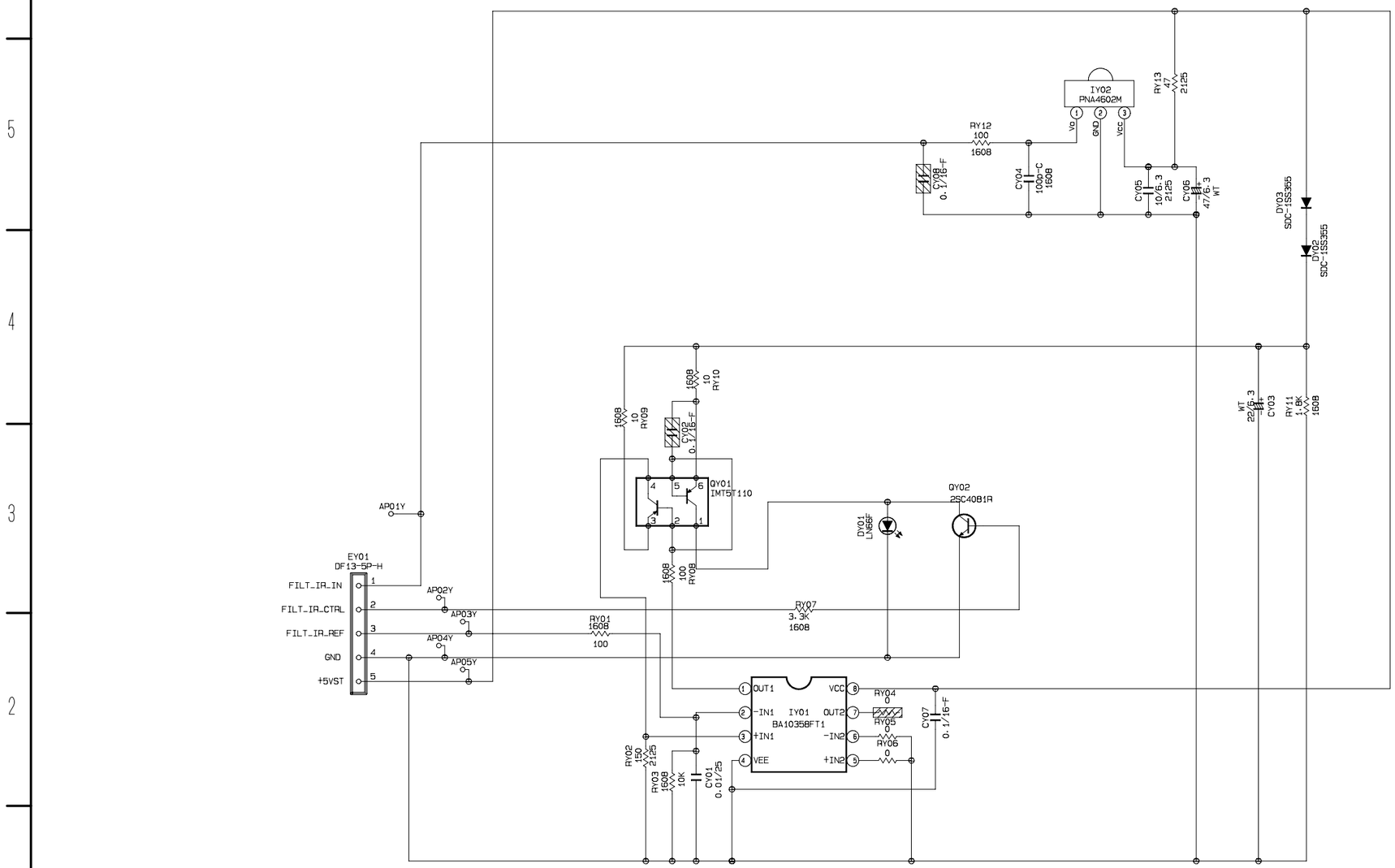
PWB assembly SIGNAL 1 (P5SX+)


6
5
4
3
2
1
A
B
C
D
E
F
G
E001
E002
R002
R005
APM5V
APMRC
C001 100P
C002 100P
H001 SC200UT
H002 SC200UT
R006 2125
R004 10K
R003
WIRED_RC
+5VST
W_RC_SW
GND
Q001 DTC114EUA
R001 47K
ET01 PJV-LPV1029-1910
APTCR
APTCB
APTY
LT01 NFL21SP407 2125
LT02 NFL21SP407 2125
LT03 NFL21SP407 2125
RT01 75 1%
RT02 75 1%
RT03 75 1%
Cr/Pr
Cb/Pb
Y
Cr
Cb
ESM2 30P_B-B
APNRC
APN12V
sync_12V
WIRED_RC
W_RC_SW
CHIME_CTL
CHIME
APNSW
APNCHM
APNCHIME
CS.A
DATA.A
CLK.A
LIN
RIN
S.CIN
YIN
S.YIN
Cb/PbIN
CVBSIN
Cr/PrIN
APNCS
APNDAT
APNCLK
APNGND
APNR
APNL
APNSC
APNSY
APNCV
APN9V
POWER5
APNPWR5
APNCR
APNCB
APNY
ET02
APTSC
APTSY
S.VIDEO IN
LT04 NFL21SP407 2125
LT05 NFL21SP407 2125
SEP.C
SEP.Y
RT08 0
RT04 75
RT05 75
APTCV
LT06 NFL21SP407 2125
RT06 0
C.VIDEO
RT07 75
C.VIDEO IN V
V.AUDIO-L IN L
V.AUDIO-R IN R
APAL
APARL
APAR
LA01 100P 2125
LA02 100P 2125
CA01 100P
CA02 100P
CA03 10/16 3225
CA04 10/16 3225
RA01 270K
RA02 270K
RA03 100
RA04 100
RA05 120K
RA06 180K
RA07 180K
RA08 120K
RA09 2.2K
RA10 2.2K
QA01 2SC4081
QA02 2SC4081
RA11 100
RA12 100
CA05 2.2/6.3 2125
CA06 2.2/6.3 2125
RA13
RA14
EA01
A-RGB1 IN
APAR1
APAL1
LA04 100P 2125
LA03 100P 2125
CA07 100P
CA08 100P
CA09 10/16 3225
CA10 10/16 3225
RA21 270K
RA22 270K
RA23 100
RA24 100
RA25 180K
RA26 180K
RA27 120K
RA28 120K
RA29 2.2K
RA30 2.2K
QA03 2SC4081
QA04 2SC4081
RA31 100
RA32 100
CA11 2.2/6.3 2125
CA12 2.2/6.3 2125
RA33
RA34
EA02
A-RGB2 IN
APAR2
APAL2
LA06 100P 2125
LA05 100P 2125
CA17 100P
CA18 100P
CA19 10/16 3225
CA20 10/16 3225
RA36 270K
RA37 270K
RA38 100
RA39 100
RA40 180K
RA41 180K
RA42 120K
RA43 120K
RA44 2.2K
RA45 2.2K
QA05 2SC4081
QA06 2SC4081
RA46 100
RA47 100
CA21 2.2/6.3 2125
CA22 2.2/6.3 2125
RA48
RA49
#002
EA03
AUDIO OUT
APAL3
APAR3
#001
LA08 NFL21SP407 2125
CA26 1.0/10 2125
LA09 NFL21SP407 2125
CA27 1.0/10 2125
CA23 100P
CA25 100P
RA50 270K
RA51 270K
APAGND
RA15 100K
RA16 100K
RA17 100K
RA18 100K
RA19 100K
RA20 100K
RA35 4.7K
IA01 M62443FP
REF
CH1IN1
RECOUT
SIMIN1
SIMOUT1
BASS1
CH1IN2
CH1IN3
CH1IN4
TRE1
OUT1
DGND
DAT
CLK
AVDD
CH2IN1
RECOUT2
SIMIN2
SIMOUT2
BASS2
CH2IN2
CH2IN3
CH2IN4
TRE2
OUT2
AGND
DVDD
CS
CA32 0.022 1608
CA33 0.47 1608
CA35 0.022 1608
CA36 0.47 1608
CA34 1608 0.033
CA37 0.033 1608
RA53 1K
RA62
RA63
RA78 75 1%
RA79 75 1%
LA10 100 4532
9V
CA13 0.1
CA29 0.1
CA14 47/16 CEMC
LA11 100 4532
CA15 10/16 3225
CA16 0.1
QA07 2SC4081
QA08 2SC4081
QA09 2SC4081
QA10 2SC4081
RA52 1K
RA54 1K
RA58 1K
RA65
RA66 1K
RA75
RA76 1K
RA64 10K
RA74 10K
RA55 10K
RA56 10K
RA57 4.7K
CA28 22 3225
H:ENABLE
RA59 100
RA60 100
RA61 100
CA38
CA30
CA31
GND
IC02 BA10358F
CC03 0.1 1608
+5VST
FREQ
RC26 27k
RC29 1K
RC27 3.3k
RC28 3.3k
RC30 10k
CC06 1000p
DC05 HSU119
+4V
-4V
RC31 0
CC12 3225 2.2
CC10 0.22 2125
CHIME
RC32 330
RC33 20k
RC34 330
CHFILTIN
CC07 0.2
POWER5
QC01 DTC114EUA
CHIME_CTL
RC04 10k
RC05 270k
DC01 HSU119
DC02 HSU119
RC06 10k
CC01 0.22
RC37 3.3k 1608
QC02 DTC114EUA
DC03 HSU119
CC08 0.1 1608
CC09 0.1 1608
RC35
RC13 5K
RC14 33k
RC15 47k
CC04 0.1 1608
IC01 BA10358F
RC18 47k
RC19 27k
RC20 22k
RC21 33k
RC22 20k
RC23
RC24 5k
RC25 3.3k
RC36
CC05
DC04 HSU119
CC11 2.2 3225

confidential

PWB assembly SIGNAL 2 (P5SX+)

PWB assembly KEYPAD (P5SX+)



PWB assembly DUST SENSOR (P5SX+)

Basic circuit diagram list

PWB assembly SENSOR
PWB assembly REMOTE CONTROL
PWB assembly LIMIT SWITCH
POWER UNIT BALLAST
POWER UNIT CIRCHIT
PWB assembly DRIVE 1
PWB assembly DRIVE 2
PWB assembly DRIVE 3
PWB assembly DRIVE 4
PWB assembly DRIVE 5
PWB assembly DRIVE 6
PWB assembly DRIVE 7
PWB assembly DRIVE 8
PWB assembly DRIVE 9
PWB assembly DRIVE 10
PWB assembly DRIVE 11
PWB assembly DRIVE 12
PWB assembly DRIVE 13
PWB assembly DRIVE 14
PWB assembly DRIVE 15
PWB assembly DRIVE 16
PWB assembly SIGNAL 1
PWB assembly SIGNAL 2
PWB assembly KEYPAD
PWB assembly DUST SENSOR

HITACHI

CP-SX1350 **YKNo.0553E** **Digital Media Division**

QR64671 Printed in Japan (JE)